The
Federal Government

Progress Report 2008
on the National Strategy for Sustainable Development

For a Sustainable Germany

German Strategy
for Sustainable
Development

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Berlin October, 2008

The aim of our Strategy for Sustainability is to establish a sustainable Germany for us, our children, and our grandchildren. Sustainability policy is driven by intergenerational equity, securing a future for both present and future generations that is worthwhile.

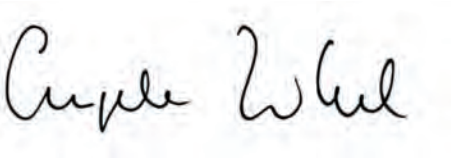
Against this backdrop, sustainability represents a fundamental challenge, both at the national level and on an international scale. It is our duty and responsibility to respect the limits for the burden on our planet. The task is to find a balance between the requirements of environmental protection, economic productivity, and social responsibility. What we do today must not deprive our children and grandchildren of the opportunity to lead prosperous lives in a sound and healthy environment. For this reason, sustainability is a guiding principle of the Federal Government.

With this report adopted by the Federal Cabinet, the Federal Government builds onto its National Strategy for Sustainable Development of 2002 and develops it further. The range of topics in this report extends from climate protection, the management of limited resources, and the safeguarding of world food supply to the social opportunities resulting from demographic change. Among other things, the report highlights the importance of a balanced public budget for intergenerational equity, since an excessive accumulation of debts and the associated increasing interest burden limit the scope of future political action.

We have made important progress in achieving a sustainable Germany. Nevertheless, we are still facing enormous political and social challenges. Thus, sustainability as a guiding principle places high demands on a modern innovation policy that prompts the development of new energy-efficient technologies and environmentally sound products and processes. These, in turn, open up new opportunities for employment.

Sustainability is not solely the responsibility of the Federal Government. I, therefore, very much welcome the fact that the German Council for Sustainable Development, along with the German Parliamentary Advisory Council on Sustainable Development and leading associations at regional and local levels, contributed to this report.

However, the commitment of politicians in and of itself does not guarantee that securing a sustainable life and way of business in any society. Protecting human life, the preservation of natural resources, and an adequate economic development are issues that affect every individual. Entrepreneurs are influenced by these issues in their decisions about production methods and procedures as are consumers in their choice of products. Each and every one of us is required to make sustainability an essential element of our thinking in every sphere of life. We will only succeed in living the concept of sustainability and making it the hallmark of the 21st century if we all join forces towards this aim.



Angela Merkel

Summary

How do we want to live today and in the future? How do we fulfil our responsibility—at the national and international level? Where does our country stand today? These are questions this Progress Report 2008 on the National Strategy for Sustainability of the Federal Government will address.

Sustainability as a guiding principle

> 'The concept of sustainability combines economic power with ecological responsibility and social justice. None of these three goals can be achieved without the other for, in the long run, no economic growth that is based upon either the ruthless exploitation of nature or social injustice is conceivable. We are aware of our responsibility not only for the present generation, but also for those to come. What we do today must not deprive future generations of the opportunity to lead prosperous lives in a healthy environment.'
>
> Chancellor Dr Angela Merkel, 52nd Food Business World Summit, 18th June 2008

Sustainability is a guiding principle of Federal Government policy (Chapter A). If we aspire to maintain our means of livelihood, our decisions must be viable on a global scale under the three aspects mentioned above: economy, the environment, and the social system. The aims of sustainability are to promote intergenerational equity, a good quality of life, social cohesion, and international responsibility. Sustainability is a benchmark for progress in our society. In order to achieve this, the right course of action for the twenty-first century must be set.

Sustainability affects all policy areas both at national and international level. It does not stop at the peripheries; nor does it stop at our borders. Therefore, the industrial nations bear responsibility for the opportunities of people in other countries. We have no right to pass on the social and ecological burdens caused by our prosperity to others. At the same time, developing countries are entitled to fair use of resources and fair participation in world trade.

In order to make sustainability a real guiding principle for politics, it must be given top priority. For this reason, responsibility for the topic of sustainability resides with the Federal Chancellery at the national level. All ministries get involved in the implementation and further development of the Strategy.

The Strategy

In this Progress Report, the Federal Government draws upon the Strategy for Sustainable Development 2002, presented for the first time by the Federal Government at the World Summit on Sustainable Development in Johannesburg and, subsequently, further developed, among others, in the last progress report in 2004.

The Federal Government strives for a sustainable development of both our country and the world in terms of economy, ecology, and social issues. Its policy is based on a long-term, global perspective that spans generations. However, it is not only politics that is challenged to rise to this goal, but also the economic sector, society, and every individual. For this reason, sustainable development is a dynamic reform process involving society as a whole. The guiding principle of sustainable development, however, is not the solution to all problems of our time. We still need to discuss and decide upon what would be the right development. This is as true in politics as well as with business and the private sector.

Sustainable development does offer, however, important general orientation concerning the question of how we want to live today and tomorrow. Since the diverse political challenges can not be

covered by one strategy alone, sustainability as a guiding principle must be considered in other strategies and decisions adopted by the respective players involved.

Increasing the influence of sustainability

The aim of the Federal Government is to strengthen sustainability as a guiding principle with its Progress Report 2008.

An important starting point is legislation. The question that must be posed in the future every time a law or decree is initiated is: what consequences will the project have on aspects of sustainable development? For this reason, sustainability will be anchored in the Joint Rules of Procedure of the Federal Ministries (GGO) within the framework of legislation impact assessments.

The broader 'sustainability management' of the Federal Government will also be improved. The concept of sustainability management contains three elements:

Management concept of sustainability

Management rules
The ten management rules summarise the guiding principle and the demands placed upon sustainable development.

Indicators and goals
Indicators show our progress on the road to sustainable development. Goals highlight the need for action and are important milestones for measuring progress and success.

Monitoring
Every four years, a Progress Report presents in detail the status of sustainable development. This report is complemented by an Indicator Report published by the Federal Statistical Office every two years that presents the development of the indicators of sustainability.

For improved sustainability management, the rights of the State Secretaries' Committee on Sustainable Development, among others, will be strengthened. This Committee is chaired by the Head of the Federal Chancellery. In the future, reports from the various ministries, cross-departmental projects, and the involvement of addition key players will increase the impact of the Sustainability Strategy on everyday politics.

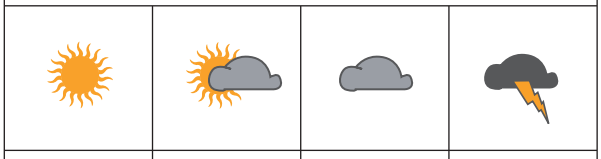
Indicators of sustainable development

Regular monitoring of progress based on certain criteria and indicators is an essential element of any successful project management. The Strategy for Sustainability contains indicators on 21 topics (Chapter B).

In preparing this Progress Report, the indicators and goals in place since 2002 have been carefully evaluated. Decisive criteria in this revision were continuity and transparency (Chapter B.I.). Within this framework, some new goals were added, such as preventative measures in the health sector.

The independent expert analysis of the development of the indicators by the Federal Statistical Office (Chapter B.II.) reveals that important challenges remain to be met on the path towards sustainable development.

Indicator status



12 goals	4 goals	12 goals	7 goals

Computations of the Federal Statistical Office on the basis of data of the previous years (assumption: development remains stable); compare the table immediately preceding B. III.

Positive developments were especially apparent in climate protection: from 1990 to 2007, the emission of greenhouse gases went down by about 20.4% (preliminary figure). In order to achieve the goal agreed upon in the Kyoto Protocol, a reduction of a mere additional 0.6% by 2012 is necessary. The share of renewable energies in primary energy consumption has increased enormously during the period between 1990 and 2007, namely from 1.3% to 6.7%. This means that the goal of 4.2% set out in the 2002 Strategy for Sustainability to be achieved by 2010 was already more than surpassed three years earlier. The share of renewable energies in electricity consumption went up from 3.4% to 14.2%. Here also, Germany had by 2007 reached its goal set for 2010, which was to cover at least 12.5% of its electricity supply with renewable energies. This means that the current European goal agreed upon for 2012 is also met.

The Federal Government has also made significant progress in the consolidation of the national budget. In 2007, for the first time since 1989 (with the exception of 2000 as the result of revenues from the sale of UMTS licenses), a balanced national budget was achieved. At the same time, the *Länder*, municipalities, and social insurance agencies registered surpluses. Only the Federal Government recorded a deficit. It is now set as a new goal of the Strategy to achieve, by 2011 at the latest, a public budget without net borrowing. There has also been progress with regard to economic development, the reduction of smoking among adolescents, the employment of older workers, full-day facilities for

children between three and five years of age, and the development of imports from developing countries.

In a number of other areas however, such as education and mobility, goals have not been met. It is also very unsatisfactory that the average salary of women in Germany is still far below that of men (cf. overview in Chapter B.III.). The Federal Government regards such points as stimuli to increase its efforts at achieving a sustainable Germany and intends to intensify its cooperation with other players to that regard. Very often, the goals of the Strategy for Sustainability can only be achieved in cooperation with civil society and all the other levels of government (regional level, municipal level).

Key aspects of the Report

The Progress Report focuses on the topics of climate/energy, resources, social opportunities resulting from demographic change, and world food supply (Chapter C).

• Climate/Energy

Climate and energy (Chapter C.I.) are central issues in the context of sustainable development, since climate protection and the way we adjust to climate change are among the greatest challenges to mankind in the twenty-first century. The report of the Intergovernmental Panel on Climate Change (IPCC) in 2007 made clear that an increase in temperature of more than 2° C over that of pre-industrial eras is not acceptable in its effects upon human beings and the environment. In order to avoid such an increase, the worldwide emissions of greenhouse gases must be reduced by at least 50% by 2050 as compared to the year 1990. For the industrial countries, this signifies a reduction of at least 60-80% by 2050. This means that the world population should not emit more than 2 tonnes of greenhouse gases per capita and year for the long term.

Goals of the Strategy:

- Double energy productivity by 2020
- Reduce greenhouse gas emissions by 21% in 2008/2012 compared to 1990
- Increase the share of renewable energies to at least 30% of electricity supply by 2020

Moreover, with the development of the Integrated Energy and Climate Programme (IECP), the Federal Government set the course for adherence to ambitious climate protection goals beyond 2012. Among the measures aimed at achieving this goal—which in part are currently still discussed in Parliament—are amendments to the 'Combined Heat and Power Act' *(KWKG)*, the 'Energy Conservation Act' *(EnEG)* and 'Energy Conservation Ordinance' *(EnEV)*, redesign of the public funding landscape by improving existing funding schemes, and the establishment of new programmes in order to promote energy-efficient modernisation of buildings/social infrastructure. Furthermore, projects include the issuance of guidelines for the procurement of energy-efficient products and provision of services, the amendment of the 'Renewable Energy Sources Act' *(EEG)*, a bill on the 'Renewable Energies Heat Act' *(EEWärmeG)*, and measures for facilitating the feeding-in of biogas, as well as a law on the accelerated development of maximum voltage networks.

At the European level, groundbreaking goals for climate protection have been agreed upon for 2020 under the German EU Presidency. These goals can be achieved by means of a clear increase in energy productivity, the use of low carbon technologies, and the development of renewable energies. The measures of the EU climate package will make a positive contribution towards achieving theses goals.

The area of energy efficiency remains a special challenge. In order to increase energy efficiency, there is a need, among other things, for efficient power stations low in greenhouse gas emissions. This may entail replacing old power stations with new ones. These should, wherever possible, be built using cogeneration (combined heat and power generation), which increases fuel efficiency by up to 90%.

In this way, Germany and the EU will continue to justify their reputations as pioneers in climate protection. On this basis, the Federal Government has been advocating an extensive and effective follow-up agreement to the Kyoto Protocol at the international level.

In the meantime, the climate has started to change. In order to confront the no longer avoidable consequences, the Federal Government is working on an adaptation strategy for economy and society.

• Resources

Urgently needed are increased efforts for a sustainable management of resources (Chapter

C.II.). Higher materials efficiency and their more frugal use decrease effects on the environment. In the past five years, the prices of important industrial resources have, in some areas, more than doubled. Against the background of increasing materials shortages, the issue is to reduce production costs (for the manufacturing industries, costs of materials currently amount to 40% of total costs) and to secure supply of resources for the industry. Lastly, the social, development assistance political and ecological effects of the reduction of resources must be carefully examined.

Goals of the Strategy:

- Use of non-renewable and renewable resources in a sustainable manner that opens up comparable economic potential for current as well as future generations, and prevents ecological and social burdens both from a national and international point of view
- A doubling of resource productivity by 2020

In order to double resource productivity compared to 1994 by 2020, further efforts are necessary. Important fields of action are the improvement of material efficiency, the development of advanced materials that conserve resources, the improvement of recycling, and the increased use of secondary raw materials and renewable resources.

In meeting the requirements for raw materials by means of their extraction and import, negative social and ecological consequences must be avoided—both on the national and international levels. Internationally recognised minimum standards and conventions must therefore be implemented, and the responsibility of the private sector (within the framework of the 'Global Compact' and the OECD guidelines for multinational companies) included. In addition, the Federal Government supports the 'Extractive Industries Transparency Initiative' (EITI) as a means of combating corruption in the raw materials sector.

The Federal Government has introduced a number of specific proposals for increasing resource productivity. In this context, the support of various research projects should be mentioned. Many measures denote economic areas with intensive resource consumption as their starting point, since innovation in these areas may have an important leverage effect and may also increase efficiency in other areas. A programme for improving material efficiency in small and medium-sized businesses (SME) is a response to the fact that existing potential for cost reduction is being under-utilised in daily business. The *Netzwerk Ressourceneffizienz* ('Network for Resource Efficiency') established in March, 2007, was designed to make use of the efficiency potential by utilising modern information and communication technologies.

Additional measures aim at the more intensive use of wood as an alternative for other more energy- and resource-intensive raw materials and materials used in industry, as well as the multiple use of renewable resources (cascade and coupled use). In addition, the Federal Government advocates for increasing transparency in the raw materials sector of developing countries by means of certification measures.

• Demographic change and social opportunities

In the future, fewer people will reside in Germany; more importantly, their average age will be higher. This may only be balanced to a certain extent through migration, or better still by an increase in the birth-rate. Due to the fact that the birth-rate has been declining since the 1970s, there are already fewer potential mothers and fathers among the population.

Unfortunately, this demographic change is usually perceived in negative terms. The question of how this change can be considered positively has been neglected (Chapter C.III.E.). In fact, many older citizens in particular possess a high degree of experience, creativity, and innovative thinking; here we have a group that desires to exercise their potential not only for themselves, but also for others. In this way, demographic change can offer opportunities to strengthen civil society, garnering a stronger sense of solidarity between generations and promoting a culture of cooperation.

Goals of the Strategy:

Develop and promote opportunities for social cohesion that arise from demographic change

Such opportunities can only be employed if voluntary civic involvement becomes more attractive. In this context, the Federal Government has introduced a variety of measures. Changes in tax law play an important role here, as do measures within the context of the health care reform to support those caring for family members.

Civic involvement mainly takes place at the municipal level. The Federal Government has

provided multifaceted support for this involvement, in particular by designing appropriate legal framework, initiating pilot projects, providing financial support for infrastructure investments, performing research, and the disseminating information. Model areas of activity here are rural areas and the sector of health care. In order to make successful examples drawn from practical experience known to a broader public, the Federal Government will initiate a competition based on the model of the earlier, successful national campaign, *Bürger initiieren Nachhaltigkeit* ('Citizens Initiate Sustainability'). The new competition will be geared towards the topic *Zusammenhalt der Generationen* ('Solidarity of the Generations').

• World food supply

The increasing prices on the world market for foodstuffs and energy endanger the 50% reduction in the number of the hungry worldwide, a goal for 2015. The crisis-ridden development of world food supply (Chapter C.IV.) is a challenge that impinges all political areas, one that requires a coordinated international strategy for action.

Goals of the Strategy:

Contribute, by means of concrete measures, to the declared goal expressed in the Millennium Declaration by the world's heads of states and governments to reduce by 50% the number of the hungry worldwide by 2015

An action plan must relieve the burden in the short term, but also must consider the main reasons for this trend. The action plan will include revised dietary habits, global growth in population, and the neglect of the agricultural sector in many developing countries during the last few years, as well as the demand for agricultural raw materials for the generation of biofuels.

Besides emergency and food aid, increased bilateral and multilateral cooperation and activities in the area of research and trade policies, an improvement in the institutional and legal framework in developing countries is especially necessary. The competition between biomass production for energy extraction and for the use of the material, on one hand, and the production of food and fodder and the maintenance of areas necessary for biodiversity, on the other hand, must also be reduced.

Where conflicts cannot be resolved, ensuring food supply takes priority over other uses of agricultural products. The goal must be to preserve all uses in a sustainable fashion.

Sustainable development—a challenge for every political arena

This Report will present the individual policy areas in line with the EU Sustainable Development Strategy—in particular Chapter D; it demonstrates the broad spectrum of topics that are relevant for sustainable development.

• Example mobility

Developing a policy of sustainability in the area of transport presents a number of challenges (Chapter D.I.). In order to create conditions for an integrated approach to a sustainable transport system, the Federal Government took the initiative of improving the CO_2 efficiency of vehicular traffic by developing the *Masterplan Güterverkehr und Logistik* ('Freight Transport and Logistics Master Plan'). In addition, the *Kraftstoffstrategie der Bundesregierung* ('Federal Government Fuel Strategy') will be aggressively pursued and further developed. Moreover, the promotion of alternative fuels and innovative, efficient drive technologies remains an important focus for achieving greater independence from mineral oil and arriving at adequate climate protection as it relates to transport. Finally, measures for stronger noise protection are contained in the Federal Government's noise protection package currently being implemented.

• Example sustainable consumption

Consumer behaviour plays an important role in achieving sustainability in everyday life (Chapter D.II.). More than 20% of greenhouse gas emissions in Germany are caused directly by private households. An increasing number of people are aware of these inter-relationships. An increase in demand for ecologically produced products is one example of this trend. Retail trade as the interface between production and consumption plays a central role for sustainable consumption.

• Example natural resources

Renewable natural assets (Chapter D.III.) may only be used long term to the extent that they are able to regenerate. This is required by the second

management rule of sustainability. Land use is currently not sustainable in Germany. In 2006, 106 hectares per day were newly developed for use. The Federal Government's goal for 2020 is 30 hectares per day. The subject of land use is an example of the necessity for vertical integration of the guiding principle of sustainability as well as for shared responsibility of the Federal Government, the *Länder*, and the municipalities. In order to achieve its goal, the Federal Government initiated numerous multifaceted measures, often in a dialogue with the *Länder* and municipal levels. Still, further progress is needed in this important area.

Biological diversity is vital for human life on planet Earth. Whether as host to the most recent UN Conference of the Parties to the Convention on Biological Diversity (CBD) or within the framework of the National Biodiversity Strategy, Germany accepts its responsibility to reduce significantly the loss of biodiversity by 2010 by means of concrete measures.

The Federal Government expressly advocates that on a national level, within the framework of EU fishery policy, as well as on the international level, the principles of sustainability be applied more strongly than up to date.

• Example education and research

To impart knowledge about sustainability early in school education is the goal of the United Nations Decade of Education for Sustainable Development. Thanks to various activities carried out by the *Länder* in cooperation with the Federal Government, the topic of sustainability is now permanently anchored in school curricula (Chapter A.I.3.).

The 2004 framework programme 'Research for Sustainability', the Federal Government's High-Tech Strategy for Germany 2006, and its High-Tech Strategy on Climate Protection 2007 set the path for sustainable development with regard to research policy (Chapter D.VIII.). Through the programme 'Research for Sustainability' alone, more than 1,000 projects within four years were supported. In order to separate economic growth from the consumption of energy and resources and from transport intensity, research and development as well as the dissemination of knowledge by means of specific educational measures play a significant role.

• Sustainability as an international challenge

The Federal Government admits assumption of international responsibility (Chapter D.VI.) as an indispensable prerequisite for global sustainable development. The fight against poverty and the destruction of natural resources are important challenges in achieving this goal. The German commitment is based on the United Nations Millennium Declaration and the Millennium Development Goals (MDG) derived from it, the resolutions taken at the Earth Summit 1992 in Rio and the action plan of the World Summit on Sustainable Development 2002 in Johannesburg.

In recent years, it was possible to launch important processes within the framework of the German G8 Presidency in 2007. A central challenge that remains is the achievement of the MDG, even if in many countries important progress has been made. In terms of sustainable development, securing natural resources and creating a global partnership remain important fields of action. The implementation of the ambitious action programme *Klima und Entwicklung* ('Climate and Development'), an increase in the financing of development assistance, and the successful resolution of the Doha Development Round are important steps within this context. Of equal key significance is the question of whether the necessary adaptation to the change in climate will be successful, especially in poorer countries. In all of these areas, Africa is at the centre of attention of the Federal Government. It will prove decisive for positive development over the next few years to firmly establish the issue of sustainability in the development assistance agendas of partner states as well as those of the donor states and institutions.

A common task of the Federal Government, the *Länder*, municipalities, and civil society

Sustainability cannot simply be decreed by the Federal Government. What is required is a joint effort on the parts of the Federal Government, civil society, the *Länder*, and municipalities. For this reason, in addition to the German Council for Sustainable Development called in by the Chancellor, the Parliamentary Advisory Council on Sustainable Development of the German Bundestag, the *Länder*, and the municipal umbrella organisations were invited for the first time to be involved in the preparation of this report.

In a contribution to the report that was unanimously approved by all parliamentary groups (Chapter E), the Parliamentary Advisory Council on Sustainable Development affirmed its demand to make sustainability a guiding principle of German politics. With its work, the Parliamentary Advisory Council actively contributes to giving greater consideration to the guiding principle of sustainable development within the processes of shaping policy.

The German Council for Sustainable Development advises the Federal Government in matters pertaining to sustainable development, and is an important player for the social dialogue on sustainability. In its contribution (Chapter F), the Council strongly advocates strengthening the binding nature of the Sustainability Strategy and calls for an improved sustainability management.

In the contribution approved by the Minister-Presidents (Chapter G), the *Länder* avow sustainability as a goal in the development of their respective *Länder*. They offer the Federal Government close cooperation on sustainability issues—an offer that the Federal Government gladly accepts.

The municipalities equally emphasize in their contribution (Chapter H) their interest in a closer cooperation as well as an increased support of sustainability activities at municipal level by the Federal Government. The Federal Government also wishes to intensify cooperation with the municipalities.

Sustainability—not purely a national affair

In many areas, policy-making in Germany occurs today in the interplay between the national and European level (Chapter I). The European Union considers sustainability to be one of its political priorities. The 'Renewed EU Sustainable Development Strategy', adopted by the European Council in 2006, is thus an important benchmark for national activities. Many goals and measures in this report area correspond to those on the European level. This correlation should and must be strengthened even further.

With its Sustainability Strategy, the Federal Government is involved as part of an international process. A milestone was the Brundtland report of 1987 that provided the conceptual framework for the resolutions of the Earth Summits in Rio de Janeiro in 1992 and Johannesburg in 2002.

Despite legitimate criticism (even by Germany) on individual points in the work of the UN Commission on Sustainable Development (CSD), CSD remains an indispensable body at the level of the United Nations (Chapter J).

Public dialogue

The discussion as to how we wish to live in the long run and what priorities we set in doing so concerns us all. For this reason, the Federal Government placed great importance on giving the public the opportunity to be comprehensively involved in the preparation of the present report with ideas and proposals at an early stage.

The statements of the public (see Chapter A.V.) have shown that the topic of sustainability enjoys broad support among civil groups. There is no dissent, however, in the public sphere with regard to the necessity of sustainable development. Knowledge of sustainability has entered political and social life across all political parties and is now firmly rooted there. The Federal Government considers this to be a confirmation of its policy and will place sustainability as a guiding principle even more strongly in the focus of its action.

Conclusion

Sustainability is an ongoing task that requires patience and resolve. It is necessary to consider sustainability as a guiding principle of Germany in a comprehensive and consistent manner. Sustainability has an impact on all policy fields. Technical, economic, and social progress must be measured against the principle of sustainability. Only when the challenge of sustainability is truly faced and sustainability efforts put into daily practice by all stakeholders can it become an engine of renewal. In this spirit, the National Strategy for Sustainable Development is a strategy for the future of the twenty-first century.

A Current Challenges

Sustainable development is a guiding principle of the politics of the Federal Government—as a permanent goal independent of election dates. The Federal Government, therefore, continues the National Strategy for Sustainable Development 2002 and develops it further.

The task of sustainable development pervades all policy fields: research and education, climate protection, civic commitment, the fight against poverty in developing countries, lasting and environmentally sound growth, reliable employment opportunities, and responsible budgetary policy, to name just a few topics relevant to the numerous questions with regard to sustainable development.

Sustainable development is not a feel-good topic with no obligations, but rather one that embraces the pressing political challenges of both present and future. There is no alternative to a sustainable design of politics. Sustainable development has become recognised as a groundbreaking political principle, one that spans all political persuasions and parties.

This second Progress Report on the National Strategy for Sustainable Development has been prepared by the State Secretaries' Committee on Sustainable Development chaired by the Federal Minister Dr Thomas de Maizière as Head of the Federal Chancellery, and adopted on the 29th October 2008 by the Federal Cabinet. The report testifies to the developments since the last report and, at the same time, updates the strategy. This concerns, among other subject areas, indicators and goals, as well as the fine-tuning of strategy for the daily work of the Federal Government. The details in this report represent the status as of July 2008, if not otherwise indicated.

I. Sustainability as a comprehensive guiding principle

From the point of view of the Federal Government, the concept of sustainable development combines the idea of justice with an intergenerational perspective; meanwhile, it links various political fields and pursues a global approach. Sustainability, thus, becomes a new term for progress. On the action level, the sustainability approach serves as a superordinate guiding principle for the individual policy areas.

> 'The term sustainabilty extends far beyond the notion of the protection of natural resources... We thus have in the principle of sustainability a characteristic feature, an indicator of what progress in our society means, since progress must satisfy the condition that nature and our ecological systems are able to bear the changes on a real long-term basis.'
>
> Chancellor Dr Angela Merkel at the ceremonial act '20 Jahre Umweltministerium Baden-Württemberg', July 2007 (20th Anniversary of the Ministry of the Environment in Baden-Württemberg)

1. Sustainability as a prerequisite for intergenerational equity

Sustainability is based upon a simple assumption: we have to observe the limits of our planet's capacity to support life in order to guarantee lasting economic prosperity and social well-being—for today's generation as well as for those in the future. Far more than the preservation of the environment is at stake here; we are talking about guaranteeing our future.

Each generation is required to solve the challenges facing it and must not unload them onto future generations—to do so would be unjust. Sustainability is the prerequisite for intergenerational equity. Intergenerational equity is violated, for example, if more resources are

consumed than can replenish themselves or for which there are substitutes. Altogether, policy must be oriented around the guiding principle that the resources and natural habitats of this world must be maintained as much as possible as a legacy for future generations. It is also a moral duty to preserve the integrity of creation in all its diversity.

2. Sustainability as an imperative of global justice

> 'Poverty is the strongest environmental pollutant.'
>
> Prof. Dr Klaus Töpfer, former Executive Director of the United Nations Environment Programme (UNEP) and member of the German Council for Sustainable Development, 18th September 1998

Sustainability not only points towards the future; it also defines the responsibility of politics for the people living today. An unequal allocation of opportunities, rights, and obligations for instance in having access to natural resources or education violates the sustainability principle of intergenerational equity.

This basic principle does not just apply to cases on an international scale alone but is also of a global dimension in many cases. Sustainability means thinking and acting within a global context, even if one is not directly affected. The basis for this is the ethical postulate to not pass on the social and ecological costs caused by our own prosperity to other countries. In this respect, sustainability also represents fairness between north and south. If goods are imported from other countries, we must not close our eyes to the environmental and social conditions that prevail in the extraction of those raw materials or production of goods.

The necessity of acting in a global context derives also from the fact that, in the age of globalisation, living conditions in other parts of the world are also influenced by us. Consumer decisions made by citizens in Germany have an impact on the living conditions in developing countries.

On the other hand, poverty and environmental damage on other continents also affects us, for example, through the growing danger of regional conflicts over natural resources or through increased migration. The solution to these problems within the framework of a global partnership thus also serves our own interests.

In its Millennium Declaration, the United Nations set a goal of reducing the percentage of people who, in 1990, were living in extreme poverty worldwide by 50% by 2015. Germany pledges to adhere to this goal and accepts global responsibility under the principle that the strong can carry a larger burden than the weak. In its management rules for sustainable development, the Federal Government defined the principles upon which its participation for shaping an international regulatory framework rests: combating poverty must be combined with protection of human rights, economic development, environmental protection, and good governance in an integrated approach.

According to the forecasts of the United Nations, there will be approximately 9,000 million people living on earth in approximately 50 years. The consumption of resources will, thus, increase. Simultaneously, only a limited amount of resources are at our disposal, and their use is unequally distributed. Competition for and conflicts with regard to their use are already foreseeable. Ethically, every human being has the same right to make use of resources, as long as these resources are not overexploited. How can Germany demand that developing and emerging countries design their CO_2 emissions in a sustainable manner if we ourselves happen to claim a higher discharge per capita in the long run than we accord those countries? How will we be able to find the ways and means to maintain our competitiveness while preserving the interests of the developing and emerging countries with regard to sustainable development?

If the policy of sustainable development raises the quest for more justice in international relations to a political yardstick, it will at the same time be an applied peace and security policy. Such a policy would help to prevent the onset of international conflicts. Europe is not an island inhabited by some fortunate race who will remain forever impervious to the consequences of ecological and social problems in other countries. It is, thus, all the more important that the European Union has strengthened its support for sustainability by adopting its 'Renewed Sustainable Development Strategy' (see Chapter I).

3. Sustainabilty asks for an integrated approach

Political areas mutually influence each other. The concept of sustainability draws upon this and turns consideration of the reciprocal effects between the various political areas into a guideline for political action. It is an act of economic reason to act responsibly in terms of ecological matters. In the context of sustainability, a trend-setting

economic policy must take ecological aspects into consideration to the same extent that environmental policy must consider economic effects. The same applies to questions of social cohesion. Moreover, besides national considerations, a global perspective is added to the national one.

For this reason, sustainability is conceptually neither a roof supported by three unrelated pillars nor the intersection of clearly definable dimensions in the sense of 'a smallest common denominator'. Sustainability involves a holistic, integrated approach; interrelationships and interdependencies must be ascertained, described, and borne in mind in order to identify long-term and stable solutions for existing problems. Environmental protection, economic performance, and social responsibility must be combined so that viable decisions based on all three aspects are considered in a global context. The preservation of the earth's durability forms the absolute outer limit. It is within this scope that the realisation of various political goals must be optimised.

'Sustainable development ... is owed to the fact that we are living in an increasingly complex world in which economy, ecology, and society can no longer be separately perceived and addressed politically. The central task of sustainable development and every political programme related to it is to pinpoint and ponder the interdependence between its individual dimensions and the associated dilemmas.'

econsense, Forum for Sustainable Development of German Business, March 2008

Sustainability aims at achieving intergenerational equity, social cohesion, and quality of life and international responsibility across the various dimensions. These are the guidelines that were correctly regarded as criteria for the guiding principle of sustainable development by the National Strategy for Sustainable Development 2002. Sustainability must always be cognisant of the whole picture while adhering to the various facets of sustainability.

II. The foundations of sustainable development

1. Global: from Brundtland to Johannesburg

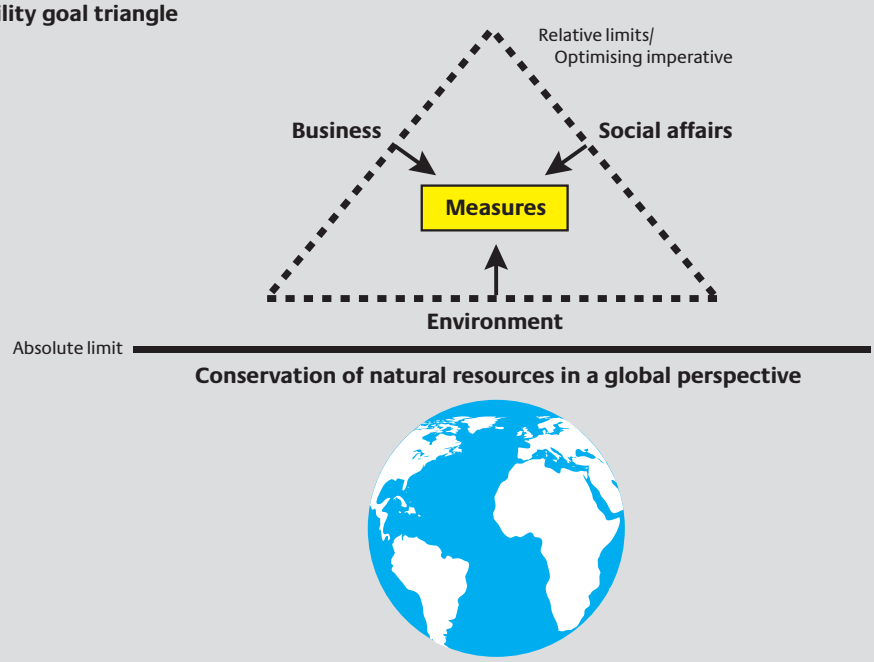
Sustainability is no invention of German politics of the present or previous legislative periods. With its current sustainable development activities, the Federal Government builds upon the various governmental and social processes in place at the international levels that made sustainability a globally guiding principle over the course of the past decades.

The Report of the Brundtland Commission of 1987 was the first to formulate such a comprehensive approach to sustainable development:

'Sustainable Development is a form of development which meets the needs of the generation of today without jeopardising the chance for future generations to meet their own needs.'

World Commission for Environment and Development ('Brundtland Commission') 1987

Sustainability goal triangle



As early as 1992, the United Nations Conference on Environment and Development in Rio de Janeiro proclaimed 'sustainable development' as a central guiding principle for global action. The conference established a global programme of action for the 21st century with its 'Agenda 21'. This mandated that signatory states form a national strategy targeted at sustainable development by the year 2002.

The Rio de Janeiro Summit is indicative of the new consciousness for collective responsibility in a global community that encompasses both the international community of states and civil society. The summit promoted the idea of sustainability throughout the world—far beyond the scope of any particular stakeholders in environmental and developmental policies. Henceforth, the guiding principle of sustainability has been embodied in global, European, and German politics. In 1992, the United Nations established the United Nations Commission on Sustainable Development (CSD). As a subcommittee of the UN Economic and Social Council, its duty is to promote the implementation of the results from the Rio conference. In 2002, the World Summit on Sustainable Development took place in Johannesburg. This summit built upon the agreements achieved in Rio by updating the deadlines for target achievement and adding new action priorities. Chapter J of this Report addresses the status of such activities aimed at sustainability within the framework of the UN in more detail.

2. National: Strategy for Sustainable Development Germany

The National Strategy for Sustainable Development provides a concrete framework for using the approach to sustainable development as a political instrument of control in Germany.

The National Strategy for Sustainable Development—as intended in 'Agenda 21'—was first presented in 2002 at the World Summit on Sustainable Development in Johannesburg. In this Strategy and in subsequent reports (Progress Report 2004; 'Landmark Sustainability 2005'), a number of topics have already been addressed in detail:

Focal points of the Sustainability Strategy 2002, Progress Report 2004, and 'Landmark Sustainability 2005' to date:

- 'Use energy efficiently—protect the climate effectively' (2002)
- 'Guaranteeing mobility—protection the environment' (2002)
- 'Producing healthily—eating healthily' (2002)
- 'Shaping demographic change' (2002)
- 'Changing old structures—developing new ideas' (2002)
- 'Innovative enterprises —successful economy' (2002)
- 'Reducing land use' (2002)
- 'New energy supply structure incorporating renewable energies' (2004)
- 'The potential of older people in the economy and society' (2004)
- 'Reducing land use' (2004)
- 'Alternative fuels and innovative drive systems' (2004)
- 'Modern energy supply—integrating renewable energies to optimum effect' (2005)
- 'Renewable raw materials—for new products and growing markets' (2005)
- 'Sustainable forestry—developing economic perspectives' (2005)
- 'Biodiversity-protection and utilisation' (2005)

The Coalition Agreement of 2005 expressly professed support for sustainability as a political guiding principle and the further development of the National Strategy for Sustainable Development. This made it clear that sustainability as a long-term approach is independent of particular legislative periods and is supported by a broad political consensus.

'The promotion of sustainable development is the goal; it serves as a rule in all our governmental action on national, European, and international levels.'

Coalition Agreement of the CDU, CSU, and SPD on 11th November 2005

The Indicator Report 2006 released by the Federal Statistical Office analysed the progress achieved in relation to the sustainability indicators. The report demonstrated that, in a number of areas, important progress has been made; yet, in many areas, additional efforts are required. The new analysis of the indicators—contained in this report as Chapter B.II.—paints a similar picture.

III. Applied sustainability—a cross-departmental task

Above and beyond the work on the strategy itself, sustainability pervades the politics of the Federal Government—without always expressly pointing to this fact in each individual instance. The fundamentals behind sustainable development are the guiding principles of the Federal Government's policies. Selected examples from certain action areas can be found below, that frequently may not appear to relate directly to sustainability, but are indeed major elements of sustainable politics. Additional information on these and other equally important topics is provided in Chapter D of this report.

1. The example of sustainable economic growth and employment

Economic aspects, such as sustainable growth and employment, combined with social and ecological aspects are central elements of the Federal Government's Sustainability Strategy. The point of departure for the implementation of the strategy is the recognition that progress in sustainable development in all three areas be mutually dependant and strengthened. As such, the Strategy aims at qualitative and sustainable growth.

Very often, the question of whether growth is sustainable is only considered with respect to improving the ecological situation in light of climate change. Sight is lost of the fact that economic prosperity, sustainable growth, and employment are essential prerequisites for combating poverty at national and international levels as well as for achieving high ecological, economic, and socio-cultural standards. Just as the protection of the environment is a condition for sustainable economic activity, the capacity of the economy to perform is a prerequisite for a high level of environmental protection. One reason for this is that the fundamentals of a sound economy must be guaranteed in order to be able to finance investments, e.g. in environmental protection. Another reason is that a positive environment for growth and innovation is centrally important to generating sufficient innovative solutions for the responsible handling of natural resources.

'Sustainability increasingly becomes an important competitive factor. In view of increasing prices, the greatest possible efficiency in the use of energy and raw materials in production processes and procedures also involves a responsible business management. In addition, it will be ever more important for customers and consumers that social and ecological standards are maintained ...

Thus whoever opts for a sustainable strategy must by no means relinquish growth and profitability, but rather achieve both in a different, responsible manner. The result is that not only are the organisations concerned winners, but each and every one of us.'

Chancellor Dr Angela Merkel, 52nd World Food Business Summit, 18th June 2008

Germany as a location for business faces global competition. That we are once again experiencing economic growth is evidence of the merit of our employees and entrepreneurs. The Federal Government has made its contribution to improving the framework conditions in order to pursue one goal of the Sustainability Strategy—a flourishing economy and the reduction of unemployment.

With an economic upturn for more and more people, record levels of employment, and a balanced budget, Germany is on the right track. The reforms in recent years are beginning to pay off increasingly. The upturn now reaches the people in the forms of improved income perspectives and additional employment opportunities. With over 40 million employed in the autumn of 2007, a peak was reached. Persons employed

Rate of return of the reforms in figures 2005–2007

	2005	2007	Change 2005/2007
Labour force	38,8	39,7	+0,9 (+2,3 %)
Employees subject to social insurance contributions (in millions)	26,2	26,9	+0,7 (+2,6 %)
Registered unemployed (yearly average in millions)	4,9	3,8	-1,1 (-22,3 %)
Long-term unemployed	1,6	1,4	-0,2 (-17,3 %)
Number of new apprenticeship contracts entered into	550.180	625.914	+75.734 (+13,7 %)
Employment rate for above 55- to 64-year olds	45,5	52,5	+7 pp
Ancillary labour costs in %	41,4	39,7	-1,7 pp
Public spending ratio in % of GDP	46,9	43,9	-3,0 pp
Financial balance in % of GDP	-3,4	0	+3,4 pp

pp = percentage points

in employment relationships subject to social insurance contributions increased in 2007 by 588,000 persons from the yearly average. The number of the unemployed dropped from a yearly average of 4.9 million in 2005 to below 3.8 million in 2007 (a drop of about 25%). The economic dynamics now are increasingly benefiting those people facing special difficulties on the employment market: older persons, the long-term unemployed, and lower-skilled workers. Nevertheless, 3.16 million unemployed (as of June 2008) are still too many.

The goal of maintaining the contribution rates to social security financed on the basis of parity below 40% for the long term is an important step towards determinedly exploiting the employment opportunities in Germany. The same holds true for a continued goal-oriented labour market policy that, in particular, combats long-term unemployment, integrates low-skilled workers into the workforce, improves the compatibility of family life and work and by means of education, and additional training addresses the lack of skilled personnel.

Against this backdrop it becomes clear that, in order to find a balance between sustainability and growth, more than an improvement of environmental protection is required. With respect to a sustainable growth, the issue is to safeguard the long-term natural conditions for the existence of life in a social market economy. The conditions for sustained growth are, in addition to protecting the environment, economic performance and social stability. Without profits and the perspective to achieve higher incomes, there would be little incentive for employees and businesses in Germany to perform well.

Well-run businesses are not only a source of growth, prosperity, and employment. They are also the prerequisite for the acceptance of social responsibility, as many employers demonstrate by their example. Many companies have established Codes of Conduct. These include, for example, not to utilise child labour or to discriminate on the grounds of personal characteristics or beliefs. Corporate responsibility is also evident, however, when in environmental issues companies look further than the end of their own nose in terms of environmental legislation and, for example, introduce voluntary environmental management systems, in particular in accordance with the European EMAS (Eco-Management and Audit Scheme) Regulation but also in accordance with ISO 14001. Even more farsighted are companies which make the guiding principle of sustainable development a top priority for company policy—including in the context of their international commitment, for example, in developing and emerging countries.

Reporting on sustainability is an excellent way for businesses to demonstrate their 'sustainability expertise'. Of the 150 largest German business firms, 58 have published sustainability reports to date. Most of these reports have come from chemical and pharmaceutical firms as well as banks. In the interests of the companies themselves this voluntary form of reporting should be used more comprehensively and in more areas.

'Responsibility is always a matter of freedom and obligation at the same time. Whoever assumes responsibility must bear it, and must himself as a free individual be prepared to answer for what he has and has not done. This is what the term 'responsibility' implies.'

Dr Volker Hauff, Chairman of the German Council for Sustainable Development, 21st November 2007

Sustainable growth is geared towards decoupling the creation of prosperity and environmental consumption. Sustainable growth of this kind will strengthen the international competitive capacity of German business for the long term and create additional jobs. In the long run German business can only survive within global competition if it permanently improves the efficiency of production conditions and products—for example, by savings on the costs of energy and materials. These products must then prove to be of value in the market. In this context the purchasing decisions of consumers play a significant role. At the same time politics must tackle the task of creating the appropriate regulatory framework for sustainable production and sustainable consumption.

Strengthening the innovative forces of growth is of the greatest importance for work, prosperity, social security and a high quality of the environment. An example of Germany's power of innovation and the strength of its exports is environmental technology. Here Germany has advanced to become a leading supplier worldwide. The average growth rates between 2004 and 2006 of 11% in resource and material efficiency and up to 30% in environmentally-friendly energy production have set the standards here. The Federal Government is also concerned to further strengthen the opportunities inherent in sustainable production.

The task of economic policy is to further strengthen the regulatory framework for successful and sustainable business activity. Budgetary consolidation, permanently reducing ancillary labour costs, reforming corporate and inheritance tax, achieving greater flexibility in the labour market, creating challenging efficiency and environmental standards, cutting back on bureaucracy and providing venture capital for business start-ups are some of the key terms here. If we succeed in further expanding the level of prosperity in Germany and utilising the existing opportunities for sustainable growth, then at the same time we will be serving the implementation of our goals, such as intergeneration equity, equality of opportunity and creating protection for the environment and the climate.

Selected elements of the 2008 reform strategy

- Improve opportunities for advancement and flexibility in the educational system
- Further increase the R&D quota. The goal is for the Federal Government, Federal states and business jointly to allocate 3% of GDP to R&D
- Implement the Integrated Energy and Climate Programme in order to reduce the dependence upon fossil energy sources and to make energy production more climate-friendly through more renewable energy and more energy efficiency
- Make globalisation more sustainable by promoting social and ecological standards internationally, encouraging corporate social responsibility (CSR) and the transparency initiative for raw materials, and implementing the ILO convention
- Stabilise company and private pension plans
- Improve preventive healthcare and health promotion
- Amend inheritance law, especially to make business succession easier for small and medium-sized businesses
- Modernise via the increased use of IT, for example online automobile registration, electronic tax reporting or electronic health identification cards

2. An example of sound budgetary policy

While for some subjects the relationship with sustainability can be easily identified, others are not generally recognized spontaneously by the public as having anything to do with sustainability—even where issues centrally revolve around sustainable development. An example of this is budgetary policy.

The course of the financial policy followed by the Federal Government is an important element in provision for the future and a key to the improvement of the quality of State expenditure, as it effectively combines efforts towards budget consolidation with initiatives to stimulate growth. What counts are not short-term results but long-term positive effects.

This year the Federal Government has published its second departmental report on the viability of public finances. The report shows the long-term effects of demographic development on public expenditure and presents appropriate reform concepts for dealing successfully with the change.

The central goal of a sustainable finance policy—besides the encouragement of growth and employment—is the protection or the creation of intergeneration equity. A budgetary policy which is financed in the long term by deficit will be at the expense of the needs of future generations. Germany has been eating into its capital over recent decades—the consequence is a mountain of debt of just under 1,600 billion euros. If we continue to live beyond our means, we will reduce the opportunity for development of our children and our grandchildren in an unacceptable manner.

Solving the debt problem is essential, and will also provide the State with new room for manoeuvre. At the same time this will help in meeting the challenges of demographic change. This is because burdens for the future are not just the result of our state of indebtedness, but also derive from the future demands on the social security system.

As well as the quantitative reduction of public debt, it is equally important to improve the quality of State expenditure for reasons of growth and social policy. This is because omitting to make the necessary investments also adversely affects the opportunities for the lives of future generations. In recent years the structure of the national budget has been strongly characterised by consumptive expenditure. Thus in 2006 expenditure on social security, especially for pension provision and the labour market, constituted some 52% of total Federal expenditure. According to current Federal financial planning, however, this percentage will reduce in the next few years. Interest payments count for around 15%. In order to improve the quality of the Federal budget, the Government, for example, has consistently reduced subsidies (financial aid, tax concessions). With the aim of a further improvement in efficiency and effectiveness, an evaluation of the twenty largest tax concessions is currently underway; the expert research report is expected to be submitted in the autumn of 2008. At the same time key aspects in areas of the future are being prioritised. Education, research and innovation, science, environmental protection and balancing the demands of family and work—as well as higher investment expenditure—are at the centre of Federal Government policy on sustainable growth.

Any deferral of the necessary budget reorganisation would only further increase the consolidation requirement.

Renouncing new debts

The financial and economic policy of the Federal Government is directed towards the structural consolidation of public expenditure and the social security systems as well as the improvement of the regulatory framework for growth and employment. The positive balance of the last two years confirms the successful interaction between consolidation and growth.

The Federal Government has made considerable progress in reducing new indebtedness, so that since the beginning of the legislative period in 2005 new indebtedness has been reduced by more than half. In 2007 the Federal budget was balanced overall, for the first time since 1989. As a result a balanced Federal budget without new debts is increasingly becoming closer to tangible reality.

By 2011 new indebtedness in the Federal budget should be reduced to zero. By means of this report, this goal will be newly anchored as a goal of the Sustainability Strategy (indicator 6).

Besides the positive economic development, a number of savings measures have been instrumental in contributing to the stabilisation of public expenditure. On the one hand for example this includes the increase in weekly working hours and the further reduction of Christmas bonuses for Federal employees. On the other hand, the cutback in tax concessions and special tax regulations, and the increase by 3 percentage points in both value added tax and the standard rate of insurance taxes, have led to sustainable tax windfalls. At the same time the revenue generated by one percentage point of the VAT increase was passed on to the Federal Employment Agency in order to enable the reduction in the unemployment insurance premiums.

Beyond the successes already achieved, the consolidation of public expenditure, especially the Federal budget, continues to be one of the most important challenges of this legislative period.

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The reform of federalism

In Germany the regulatory framework for economic and financial policy is substantially shaped by the Federal structure of the state. In the context of the current activities of Federalism Reform II, the financial relationships between the Federation and the *Länder* are now to be brought in line with the changed regulatory framework. In this, a central role in the area of finances will be given to limiting government debt. Stricter regulations on debt can ensure that the Federal Government is able to recover or expand the financial latitude necessary for compliance with pressing future tasks. Beyond financial topics, the discussions will also include opportunities of improving the quality and efficiency of public administration, for example, through restructuring, standardisation, automation, bundling or improving cooperation between different levels and organisations.

In view of the substantial level of debt at both Federal and local levels, a joint strategy for drastic consolidation of public expenditure is essential. Here the incurring of new debt needs to be clarified and restricted by means of a constitutional amendment. The current limit upon incurring new debt under Article 115 of the Basic Law has been unable to effectively contain the debt dynamics of the last few decades. The goal is a new debt ruling which is aligned with the European Stability and Growth Pact and allows for the objective of a budget which is approximately balanced out over the course of the economic cycle.

The discussion on these points should be concluded during this legislative period and the results implemented in legislation.

3. An example of education for sustainable development

Politics can establish parameters. However, the notion of sustainability can only develop a wider effect when it becomes part of everyday life and is used as a measure for everyday decisions—in shopping and deciding where to go on holiday, or for involvement in clubs or the social area. Making sustainability a reality requires the involvement of every citizen. In order to implement sustainability, we need to harmonise innovative solutions, economic performance, social justice and responsibility for the natural world.

'Sustainable development begins in the head and releases impulses for progress. Education, scientific curiosity and inventive talent are their fuel. Entrepreneurship and civil society are their drivers.'

Prof. Dr Jürgen Rimpau, Member of the German Council for Sustainable Development

Education plays a key role in this respect. On the basis of the allocation of rights and duties between the Federal Government and the *Länder*, not least reinforced through the results of the Federalism reform from the summer of 2006, the responsibility for the design of educational policies lies to a great extent with the *Länder*.

UN Decade of Education for Sustainable Development

In implementing the resolutions of the 2002 Johannesburg world summit for sustainable development, the United Nations has declared the years 2005–2014 the United Nations Decade of Education for Sustainable Development. UNESCO was made responsible for the international general management. In a unanimous resolution of 1st July 2004, the German Bundestag called upon the Federal Government to pass measures for the implementation of the UN Decade and to introduce a plan of action. This was done on 13th January 2005. The UN Decade in Germany will be implemented under the aegis of the Federal President, Horst Köhler.

Strategic goals of the national plan of action for the UN Decade 'Education for Sustainable Development' of the 13th of January, 2005

1. Further development and bundling of the activities as well as the transfer and spread of successful practices
2. Networking of the players in education for sustainable development
3. Improvement of the public awareness of education for sustainable development
4. Enhancement of international cooperation

On the basis of the resolution of the German Bundestag and on behalf of the Federal Government the German Commission for UNESCO—financed from the Federal budget—is coordinating the implementation of the UN Decade in Germany. For this purpose it has appointed a national committee as an advisory and organisation body; represented within it are the Federal Government, the German Bundestag, the *Länder*, civic municipalities, private business, the media and non-governmental organisations, experts and the bodies representing pupils at *Land* level.

The action plan comprises a catalogue of currently 67 measures which will be regularly updated. An initial evaluation of the measures after a period of two years revealed promising progress in nearly all areas.

However, in order to secure sustainable development in the educational system nationwide, considerable efforts still remain to be made despite substantial obvious progress in the last few years. One of the goals is to implement the decade on a broad basis in Germany, and to reinforce the networking between the players in education for sustainable development. For this reason the National Committee has issued invitations to a round table discussion at which one hundred establishments involved in education for sustainable development are represented.

In order to make examples of good practice visible in public and to publicise the issues of education for sustainable development, the National Committee awards recognition to 'Official German Projects for the UN Decade'. Towns, rural districts and municipalities can compete for recognition as a city or local authority of the UN Decade. At present 633 initiatives have been recognised as official German projects for the UN Decade. Following the German example, other UNESCO member states have adopted similar certification. In support of the public perception of education for sustained development and improved networking by the participants, the German Commission for UNESCO also runs an Internet portal on education for sustainable development *(www.bne-portal.de)*.

In keeping with the goals of the action plan the Federal Government is also campaigning internationally for active implementation of the UN Decade 'Education for Sustainable Development'. It has been doing this by means of its involvement in developing the programme of the UNESCO coordinators, by means of cooperation with the steering committee set up by the UNECE for the UN region Europe and by means of international events and projects. The German implementation of the Decade as a joint project involving politics and civil society is regarded as a model internationally. Not least for this reason, UNESCO accepted the invitation of the Federal Government to hold a major world conference on education for sustainable development on the occasion of reaching the midpoint of the decade in 2009. The conference is planned for 31st March to 2nd April 2009 in Bonn.

A further significant measure is represented by the qualification initiative *Aufstieg durch Bildung* ('Advancement through Education') from January 2008, which is to be implemented jointly by the Federal Government and *Länder* as well as business and social partners (additional details in Chapter D.VII.).

Transfer 21

Anchoring sustainable education in practical activity in schools is of decisive importance. Substantial progress has been made here in the past few years.

The goal of the programme running from 2004 to 2008, 'Transfer 21', was to involve 10% of German schools in activities towards sustainable education, building on the results obtained in a previous programme organised by the Commission of the Federal Government and the *Länder* for the promotion of educational planning and research, which has been running since 1999 ('Transfer 21'). Some two hundred schools from 15 *Länder* took part in this programme, which as a model programme mainly concentrated on lower secondary education and sixth form education.

The goal of Transfer 21 has been achieved. A total of 12.1% of general schools in the participating *Länder* took part. There was especially great interest amongst primary schools; in many *Länder* primary schools made up more than 50% of the participants.

Orientation framework

Intensive cooperation between experts from the Federation, *Länder* and civil society in the period since 2004 has led to the creation of the *Orientierungsrahmen* für den *Lernbereich Globale Entwicklung* ('The Orientation Framework for the Curriculum Area of Global Development'), which was signed off and presented to the public on 14th June 2007, by the Ministers of Education and Cultural Affairs. The orientation framework places the schools' involvement with questions of globalisation and sustainable development on a new and broader basis. It has been set up on a cross-disciplinary basis, and enables this concept to be integrated into compulsory course work in schools, so that it will become part of general education in Germany.

The orientation framework explains the fundamental concepts of sustainable development for all school areas—on the one hand, through examples of relationships with central school subjects whose scope will be broadened and, on the other hand, through connections with current developments of educational policy which are more strongly focused on results-orientated teaching and the acquisition of competences. The specific competences which pupils will be expected to master by the time they have finished their lower secondary education will be defined; the definitions of these competences will be compatible with the competence models of the subject areas and the subject-specific didactics involved. The Federal Government and the *Länder* continue to cooperate closely in implementing this orientation framework in the school sector. The players involved are also supported by a project hosted by InWEnt *(Internationale Weiterbildung und Entwicklung gGmbH)* in cooperation with civil society, the Federal Government and the *Länder*.

The example of teaching material on 'Biological Diversity'

Since 23rd July 2008 teaching materials prepared by the Federal government on the theme of 'biological diversity' can be downloaded from the Internet *(www.bmu.de/bildungsservice)*.

In the material designed by specialists in education for sustainable development, the theme of biological diversity is approached via experiments, analyses, excursions and practical exercises as both an adventure and a sensory experience appropriate for the respective age group. Children conduct research on the 'Chemist's Shop of Nature' and themselves manufacture cough drops. They tackle the topic of 'diversity' by examining the differences and similarities within their class. By making discovery trips in the vicinity of their schools, they experience how diverse—if also sometimes at first glance unremarkable—plant and animal life can also be in an urban environment.

On 15th June 2008, the German Conference of Ministers of Culture and Education finalised a joint recommendation together with the German Commission for UNESCO on education for sustainable development. In this, education for sustainable development is formulated as a holistic and interdisciplinary vision of education and upbringing which will serve to convey knowledge and options for action which are important for the sustainable future of our planet. Pupils should be given the abilities to actively shape an ecologically compatible, economically effective and socially just environment allowing for global considerations, democratic first principles and cultural diversity.

IV. Sustainability management

Sustainability is a guiding principle in the concrete political activities of the Federal Government. In particular the Federal Government will provide an even better guarantee in organizational terms that sustainability will be borne in mind in administrative practices as well as in the drafting of laws and statutes.

1. Institutions—the German system of sustainability

In international comparisons too Germany has a good and well-developed system of sustainability institutions:

a) Sustainability as a priority

In Germany sustainable development is a matter of central importance, as within the Federal Government the responsibility for the National Sustainable Development Strategy lies not with one ministry, but with the Federal Chancellery.

This shows the importance attached to the issue and at the same time indicates the transversality of sustainability. As a concept of overriding importance, sustainable development requires the political support that it can only acquire by being attached to the pinnacle of government.

b) State Secretaries' Committee as the highest controlling body

The State Secretaries' Committee on Sustainable Development is a high-ranking coordinating and monitoring body for sustainability. As the sustainability control centre its duty is to establish the major directions of the Strategy for Sustainable Development, keep an eye on developments and where appropriate intervene to exert control. Characteristic of the Committee's method of working is its orientation around cross-departmental concept of sustainability which is a joint project of the Federal Government.

The committee is headed by the Head of the Federal Chancellery. Since the beginning of this legislative period all departments have been represented on the committee. This is based on the assessment that sustainability affects all political areas—even those which up to now have classically not been associated with it, such as the Federal Ministry of the Interior, the Federal Ministry of Justice or the Federal Ministry of Defence.

c) The so-called UAL-AG

Scarcely known by the public but of great importance for the practice of sustainable development by the Federal Government is the Working Group for Sustainable Development, the so-called UAL-AG. Behind this abbreviation lies a permanent working group guiding the ongoing process towards sustainable development within the Federal Government. The departmental staff responsible for sustainability participate in this working group at 'subsection management' level. Here conflicting departmental interests are harmonised and coordinated; not least meetings of the State Secretary Committee are prepared here. The working group is conducted by the Federal Chancellery.

d) The German Council for Sustainable Development

An important role in the formulation, further development and implementation of the strategy is played by the German Council for Sustainable Development. Its members are appointed for three years by the German Chancellor; reappointment is possible in principle. The Council is chaired by the retired Federal Minister Dr Volker Hauff; the Deputy Chairman is retired Federal Minister Prof. Dr Klaus Töpfer. The members of the Council represent ecological, economic, social or global concerns depending on their professional and personal backgrounds.

The German Council for Sustainable Development advises the Federal Government on matters of sustainable development and is intended to contribute to the further development of its sustainability strategy by making suggestions. In addition it has also published separate recommendations on individual issues. The Council further performs an important function in the social dialogue on sustainability. Its annual conferences have become the forum in Germany for sustainability policies. On behalf of the Federal Government and in the context of its Presidency of the Council of the European Union, amongst other things in June 2006 the German Council held a European conference on sustainability.

Sustainable development presupposes profound changes in business and society, as it can only be achieved when sustainability is accepted as a

Members of the German Council for Sustainable Development

Horst Frank

Lord Mayor of Constance

Dr. Hans Geisler

Former Saxon State Minister of Social Affairs, Health, Youth and Family Affairs

Dr. Volker Hauff

Senior Vice President, Bearing Point, Inc.

Prof. Dr. Ute Klammer

Professor of Political Science, in particular social policy at the University of Duisburg-Essen

Prof. Dr. Edward G. Krubasik

Honorary Professor at the Technical University Munich, Former Member of the Managing Board of Siemens AG

Thomas Loster

Director of the Munich Re Foundation

Prof. Dr. Jürgen Rimpau

Member of the Board of the German Agricultural Society (DLG), Halberstadt

Prof. Dr. Georg Teutsch

Scientific Director, Helmholtz Centre for Environmental Research—UFZ

Marlehn Thieme

Member of the Council of the Evangelical Church in Germany, Director *Deutsche Bank AG* CSR

Prof. Dr. Klaus Töpfer

Former Undersecretary General of the United Nations, former Executive Director of the United Nations Environment Programme (UNEP)

Christiane Underberg

Co-owner of Underberg KG

Michael Vassiliadis

Member of the Executive Board of the *IG BCE* (Mining, Chemical and Energy Industrial Union)

Hubert Weinzierl

President of the *Deutscher Naturschutzring (DNR)*

Dr. Angelika Zahrnt

Honorary Chairperson of *BUND* (Friends of the Earth Germany)

principle by society. For this reason it can and should not be decreed from on high. If it is to succeed, society and the economy must accept it as their own responsibility.

The Council has been involved in this Report in the form of a text for which it is itself responsible as a guest contribution (Chapter F). It is expected that in the future the Council will be able to become even more intensively involved in work of the Federal government; for this the working capacity in the office of the Council—which is managed by the General Secretary of the Council, Dr Günther Bachmann—will be increased. Additional information on the Council can be obtained at *www.nachhaltigkeitsrat.de*.

e) The Parliamentary Advisory Council on Sustainable Development

The support that the Federal Government has now already enjoyed for two legislative periods in the German Bundestag is important.

> 'Sustainability is and remains, regardless of decisions made at the ballot box, a long-term and permanent task for everybody to ensure that economic, social and ecological challenges are linked and our country is prepared for the future.'
>
> Parliamentary Advisory Council on Sustainable Development, press release, 20th January 2005

The Parliamentary Advisory Council was initially established in the spring of 2004 by the German Bundestag to provide more intensive parliamentary support for the process of sustainable development in Germany. In this legislative period the Council chaired by Dr Günter Krings, MP, dealt in detail with central questions of sustainability, for example, within the framework of expert hearings. The Council now comprises 40 MPs from all parliamentary parties who can incorporate the results of the work of the Council into the work of the parliamentary parties and special committees. The Council submits proposals, for example, on enhancements to the Strategy for Sustainable Development and provides medium-term and long-term recommendations on individual subjects relating to sustainability. The Council has also provided this Report with its own guest contribution (Chapter E).

2. Need for Reform

A greater commitment—this is one of the demands being placed upon the Federal Government in view of past experiences with the Strategy for Sustainable Development. This, among other things, was expressed by the Sustainable Development Council in its recommendation 'More Effective thanks to a Greater Commitment'.

> - 'Every credible strategy must include, besides the essential stakeholders representing the government, stakeholders from business and civil society'
> - 'Sustainable development does not stop at national borders'
> - 'You can only manage what is measurable'
> - 'Strengthening commitments'
> - 'Management of public affairs'
> - 'Identifying conflicting goals'
> - 'Shaping the learning environment'
>
> From: 'More Effective thanks to a Greater Commitment'—Recommendations of the Sustainable Development Council, 23rd August 2007

The Parliamentary Advisory Council on Sustainable Development is also striving towards achieving a stronger control function for the Strategy for Sustainable Development; in concrete terms, it is calling for changes to be made in order to do better justice to the idea of sustainability as a long-term and cross-departmental task.

The need for enhancement of the Strategy in terms of management aspects is emphasised by the German Advisory Council on the Environment in its Environmental Report 2008. Among other recommendations, the Advisory Council advocates improvements in monitoring and evaluation as well as a strengthening of the institutional and personnel basis of the process of sustainable development, for example, by establishing an independent work unit for sustainability at the Federal Chancellery. This demand is supported by, among others, environmental associations and by parliament.

Germany's activities relating to sustainability are well positioned, also in international comparison. The themes being dealt with have provided the impetus for important developments; one example of this is the fuel strategy (see also Chapter D.I.1.). The Strategy for Sustainable Development achieved important preliminary work on the basis of which political processes—often without any express reference to the strategy—were pursued. Even where themes are not expressly dealt with and communicated under the rubric of sustainable development, the associated concerns are of crucial importance.

Nevertheless, sustainability can and should be moved even more energetically into the focus of the work of the Federal Government. Therefore, the Federal Government is actively working towards advancing effective management of sustainable development at all levels (EU, Federal Government, *Länder* and municipalities) and in all social fields (administration, business, households, etc.).

3. Measures

In order to improve the quality of the Strategy as a tool to shape and control processes, the Federal Government provides for the following measures, which have either already been implemented or will be implemented soon:

a) Increasing the capacity of monitoring and control of sustainability

The approach towards sustainability shall be made more manageable and, consequently, its potential for monitoring and control increased.

Strategies cannot replace individual decisions made in diverse policy areas, but they can provide a common framework. The Strategy for Sustainable Development can only offer such a framework if there is clarity about its contents. It is not helpful that the term 'sustainability' is often misleadingly used as a synonym for 'emphatic' or 'lasting'. This may give the impression that the concept of sustainability ultimately lacks substance because it is not clearly defined. The Federal Government will therefore take greater care in future to use the term appropriately.

The Federal Government's concrete understanding of sustainability has been explained above. However it is sometimes not entirely clear what the prevailing strategy is exactly—the 2002 Strategy for Sustainable Development, the 2004 Progress Report, or the 2005 'Landmark Sustainability'? An additional difficulty in converting the strategy into practice is the lack of separation between the Sustainability Strategy and the Progress Reports as well the absence of statements detailing which of its parts might have been overhauled in terms of content or policy.

For this reason, in this document, the Federal Government once again clarifies the core elements of the strategy (see Annexe, p. 206). This statement includes, among other things, the management rules, the indicators and the goals as well as significant points covering the areas of institutions and procedures.

b) Stronger integration into political and administrative practice

In order to exploit more effectively the potential for monitoring sustainability as a groundbreaking and unified concept, the Federal Government is continuing integrating sustainability into political and administrative practice. The approach towards sustainable development can only shape policy if it is the guiding principle of practical action.

aa) Management rules of sustainability

The management rules of sustainability are the central tool on the road from theory to practice. In its 2002 Sustainability Strategy the Federal Government builds on existing preliminary work, such as studies by *BUND*/Misereor (Sustainable Germany, 1996), the Federal Environment Agency (*Nachhaltiges Deutschland* [Sustainable Germany], 1997) as well as the paper prepared by the Committee of Enquiry of the 13th German Bundestag ‚Protection of Mankind and the Environment' (*Konzept Nachhaltigkeit* [Concept of Sustainability], 1998) with these rules and developed the concept further. The basic rule is:

> *Each generation must solve its own problems and not burden the next generation with them. At the same time it must make provisions for any foreseeable future problems.*

In addition, there are rules for specific areas of action. In this Progress Report, the management rules have been updated based on developments since 2002 (see Annexe, p. 207).

bb) Management system—concrete goals, clear responsibilities and procedures and regular monitoring of performance

The aim of the changes to the original strategy presented below is to make the management rules even more relevant to the daily work of the Federal Government.

The concept of management is the starting point for improving monitoring of sustainable development within the broad circle of existing institutions. The idea behind any management approach—for example, of quality management as defined in ISO 9000 or environmental management as defined by the EU-EMAS Regulation or ISO 14001—is orientation towards concrete goals, regular monitoring of performance with responsibilities set out clearly and 'readjustment' when developments are not headed in the right direction.

Adjustment of the sustainability indicators and goals

Indicators for measuring developments and concrete goals against which these developments can be assessed are vital to any management approach. Besides goals currently set by the Federal Government in specific fields, there are superior long-term sustainability goals. These underpin the strategy in 21 areas and cover the scope of the political tasks—from the conservation of resources to the opening of markets for developing countries.

In this Report the Federal Government has revised the existing system of indicators and goals. Its starting point was the assessment that continuity in goals and indicators is an important prerequisite for making the long-term trends crucial for sustainable development clearly perceptible. The Federal Government, therefore, decided for the most part to adhere to indicators and goals even if these goals may only be achieved in the long term or by means of a reversal of current trends. In some cases, however, despite efforts to maintain continuity, it was time to adjust the existing goals and indicators. A special inter-ministerial working group discussed the relevant questions intensively. The results are presented and explained in Chapter B.

Examination of sustainability in legislation impact assessment

Several bodies have expressed support for the introduction of a sustainability check within the framework of legislation impact assessment. The Parliamentary Advisory Council on Sustainable Development did so in a resolution of 3rd March 2008 supported by all parliamentary parties. Other supporters are the German Advisory Council on the Environment in its Environmental Report 2008 as well as econsense—Forum for Sustainable Development of German Business. The Federal Government responds to this request within the framework of the amendment of the Joint Rules of Procedure of the Federal Ministries (GGO).

In future, sustainability is to become a component of legislation impact assessment. Only when possible unintended side effects of legislative initiative are taken into consideration—from an intergenerational and global point of view— as soon as possible during the process of legislation can problems that arise be solved; as it is only then that basic possible alternatives come to light. For this reason, at department level, the responsible member of staff should pose the question early on as to whether a planned regulation can potentially contribute to the achievement of sustainable development or whether the regulation might come into conflict with this goal. An appropriate regulation will be added to Section 44 of the GGO.

Strengthening the role of the State Secretaries' Committee on Sustainable Development

The State Secretaries' Committee on Sustainable Development, formerly referred to in short as the 'Green Cabinet', shall in future have more significance as a central authority within the Federal Government for the management of sustainability. The frequency of its meetings will be increased when necessary so that better use can be made of this body in the discussion of ongoing political undertakings involving sustainability. In addition, departments shall prepare short reports on sustainability in their own areas of competence. This will serve to create a management cycle of just over one year that covers all policy areas, thus strengthening implementation of the concept of sustainability. The Heads of the Parliamentary Advisory Council on Sustainable Development and the German Council for Sustainable Development, as well as, if necessary, representatives from the *Länder* and municipalities, may be invited to the meetings of the Committee.

Progress Report and Indicator Report

In future, the Federal Government will report once every legislative period on sustainability within the framework of a comprehensive progress report. In addition, every two years reports on the performance of sustainability indicators will be prepared. Here the analysis conducted by the Federal Statistical Office has proven its worth.

c) Strengthening vertical and horizontal integration

aa) Cross-departmental projects

To ensure that all departments identify more strongly with sustainability as a goal, cross-departmental projects—projects that are not geared primarily towards individual departmental interests but whose primary goal is closely connected with the concept of sustainability—will prove useful in showing that sustainability is practised by the Federal Government as a cross-sectional concern. An example of this is the resolution of the Federal

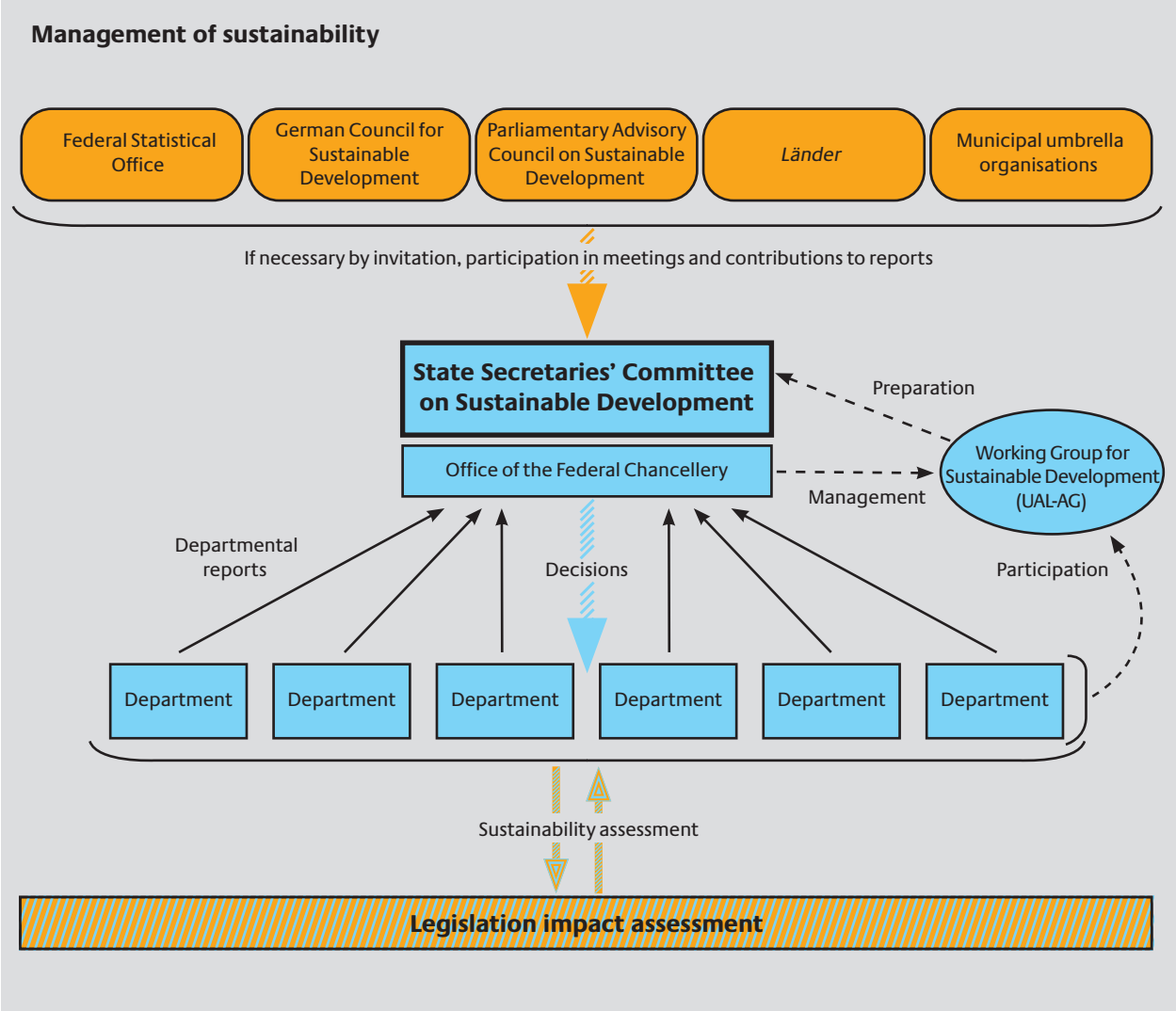
Government in favour of climate-neutral business trips (more on this point in Chapter C. I.). The Federal Government will regularly review additional projects suited to this purpose.

bb) Strengthening alignment with the European strategy

Policies today are shaped as an interplay between the national and the European level. The National Strategy for Sustainable Development thus relates to the 'Renewed EU Sustainable Development Strategy' adopted by the European Council in June 2006 (more on this in Chapter I). In order to strengthen alignment of the National Strategy for Sustainable Development with the European strategy, Chapter D in this Report is based on the structure of the European strategy.

cc) Stronger integration of additional stakeholders in sustainable development

To achieve a better vertical integration of the strategies for sustainable development, the alignment of the strategies for sustainable development between the national, regional and municipal levels is to be strengthened. Previous reports have already presented the condition of sustainability in the *Länder* on the basis of their written contributions. This Report goes a step further by giving the *Länder* the opportunity to provide a guest contribution (Chapter G). The same applies to municipal umbrella organisations (Chapter H). The Federal Government is interested in further expanding this cooperation.



V. The social dimension—the reporting process

Sustainable development is based upon participation and sharing. It lives on social discussion and on civil involvement. The discussion on how we want to live in the long term and what priorities we wish to set is a concern for all of us. The Federal Government promotes the idea of strong sustainable development.

As in 2001/2002 when the Sustainability Strategy was drawn up and in 2004 in the first Progress Report, the Federal Government set great store by giving the public the chance to get involved in the process at an early stage with comprehensive suggestions and proposals. As early as November 2007, with the publication of a consultation paper, the Federal Government turned to interested members of the public, requesting comments and suggestions. At the same time, the Government provided a great deal of information on the matter.

In May 2008, the draft report was published after being approved by the State Secretaries' Committee on Sustainable Development. The text was made accessible on the Internet for all citizens, who were able to submit comments to the Federal Government. This opportunity to comment was also widely publicised. Besides individuals and associations, some representatives of individual parliamentary parties seized this opportunity and, in addition to general remarks, also made concrete suggestions on amendments to the wording of the text.

In addition to events put on by individual departments with organisations and interest groups that concentrated on the environment and global questions, the draft was discussed on 19th June 2008, at a central dialogue event in the Federal Chancellery, in which about thirty institutions and organisations took part.

In addition, at the request of the Federal Government, the Sustainable Development Council organised a citizens conference (from 12th to 14th June 2008) to which one hundred of the youngest members of the municipal parliaments were invited; the resulting suggestions have been integrated into the contribution of the Council contained in the Progress Report.

The remarks received contained many valuable tips for the preparation of this report. It was recognised that the strategy and understanding of sustainable development were promoted by the report. It was also noticed, however, that implementation of the strategy in the activities of the Federal Government needed further enhancement and the concept of sustainability needed to be anchored even more strongly in the departments.

„In this draft of the 2008 Progress Report the Federal Government has improved the design of the National Strategy for Sustainable Development as well as the understanding of sustainable development. However, the Federal Government now must also make these basic principles a guiding principle of its national policy, for otherwise the goals of the strategy will not be achieved. All told, the urgency of the situation is not reflected in the 2008 Progress Report.'

Opinion of environmental associations (DNR e. V., BUND e. V. and NABU e. V.), June 2008

The choice of focal areas as well as Federal Government's considerations on strengthening management of sustainability were especially commended. Throughout, the suggested changes did not weaken positions but improved standards and ensured implementation of the proposed measures to lend sustainability greater effectiveness in the long term; even the question of available capacities in the Federal Government became a subject of sustainability. The Federal Government was encouraged to be more candid about existing conflicts in areas of policy-making —by mentioning the stakeholders involved (civil society, the Federal Government, *Länder*, municipalities). This should position sustainability as a social reform project.

The activities of the Federal Government in terms of consulting and providing additional information on the content of the received statements will be presented in an Internet brochure composed by the Federal Press Office.

The statements submitted by the public to the Federal Government have shown that sustainability enjoys wide support throughout the country. There is no need for public debate about the necessity of sustainable development; sustainability has a secure position in political and social life and has irrevocably gained favour in all political parties. The Federal Government regards this as support for its policy and will focus its activities more intensively on sustainability as a political model.

B

The State of Sustainability in Germany: Indicators and Goals for Sustainable Development

I. Further development of the indicators

Sustainability calls for dependable and transparent monitoring of results. In its Indicator Report 2006 for the first time the Federal Statistical Office—following the 2004 and 2005 reports by the Federal Government—analysed the status of the sustainability indicators in relation to the targets of the strategy originating in 2002 under its own responsibility. Six years after the strategy resolution it was time to monitor the existing targets and indicators.

Procedure: IMA Indikatoren

Starting in September 2007, the inter departmental working group on sustainability indicators of the Federal Government, called IMA Indikatoren discussed questions such as 'Are there better and more informative indicators?' or 'What happens to targets which have already been reached?' or 'What about targets that are basically desirable but which from today's point of view are not actually achievable in full in the time-frame originally planned?' or 'Is it justifiable in view of the credibility of the strategy to maintain such targets?' together with the Federal Statistical Office.

At the same time it was a premise in the experts' discussion in the IMA Indikatoren to maintain broad continuity in the targets and indicators as far as possible in order to guarantee future traceable monitoring of results and to make the long-term trends for sustainable development perceptible. Moreover, the number of indicators should continue to remain limited.

The IMA Indikatoren discussions ran parallel to the multitude of comments offered by citizens, various organisations, the German Council for Sustainable Development and the Parliamentary Advisory Council on Sustainable Development as well as current information from ministries and the public authorities under their control. In the course of the discussion IMA Indikatoren became persuaded that the set of indicators still applies to the main topics of sustainable development in 2008. Nevertheless, IMA Indikatoren spoke out in favour of deletions in individual cases, a change in the breakdown, an improvement of the presentation as well as the inclusion of improved and new indicators.

Consultation—dialogue with the public

Thoughts on the further development of indicators were expressed in a draft version of the Progress Report published in May 2008. For the purpose of achieving the greatest degree of transparency the proposed changes were presented and it was discussed in detail that the goals for the indicators 11a (Intensity of freight traffic), 11c, d (Share of rail transport and inland water transport) as well as 18 (Wage difference between women and men) should only be determined once the results of the consultation process were clear. The conclusions of the consultation process were clear: in the statements received, an overwhelming majority of the participants in the dialogue recommended retaining the stated targets—even in view of the fact that a short-term achievement of targets was at least to a certain degree more than questionable.

Starting point: why setting goals?

What do we want to achieve with our goals? This must be the starting point for all considerations relating to the further development of the indicators.

Goals are basic components of the management approach to the Sustainability Strategy. Quantified goals define the policy aspirations and the need for action. At the same time they make policy accountable and enable a course correction to be carried out, where necessary.

However, it was not or is still not possible for the Federal Government to shape all the political areas referred to in the 2002 Strategy. An example are the indicators in the field of education (9a-c), since changes here must be initiated chiefly by the *Länder*. In part the goals also refer to challenges for society as a whole, for which policy can only offer a limited contribution. For example this affects the indicator of the wage difference between women and men (indicator 18). Since the causes are various, and structural and cultural factors influence each other, an integrated approach with the involvement of all stakeholders is required. Thus, decisions in collective agreements are chiefly made by the representatives of employees and employers without the possibility for the Federal Government to exert influence. However the differences in the career paths of men and women also play an important role in the wage difference. Moreover, women with the same formal qualifications are frequently paid less than men.

Given the fact that sustainability and the achievement of goals defined in the Strategy for Sustainable Development are common tasks of politics and of society on all levels, it is necessary not to restrict goals to what can definitely be achieved by the activities of the Federal Government alone. In this respect it is necessary to balance

- the definition of goals that the Federal Government can use as a concrete instrument of monitoring and control within the framework of goal-oriented management,
- and the definition of goals that primarily affect society. This could be achieved by signposting a path of development and thereby offer stimuli for the actions of all those involved.

It is true however, regardless of group the goals are aiming at, that you need to aim high, if you want to achieve your goals. Illusory targets, however, are more likely to lead to frustration than motivation.

Contrary to strategies in other policy areas, the Strategy for Sustainable Development claims to be universally valid. Sustainable development requires decisions to be taken in every area and at every level. This Report will therefore present concrete measures and major stakeholders within the framework of the presentation of the respective policy areas (Chapter C onwards).

In 2002 some developments—positive as well as negative—were not yet foreseeable. Some goals were achieved earlier than expected and require additional more ambitious targets, while other goals are far from being reached by 2010. In a few cases, there has even been a movement in the direction away from the goal. This means that the goal can no longer be achieved, at least not at the date originally intended. An example of the latter is the goal related to the intensity of freight traffic. All forecasts show a further increase in the intensity of freight traffic, instead of a decline. Globalisation of transport and the increasing importance of Germany as a transit country for European freight traffic limit the opportunities to influence this development at a national level. For this reason during the consultation process the Federal Government had raised the question as to whether in such cases the goals ought to be adhered to—or whether a more realistic goal should be defined that can then be achieved by means of concrete measures.

Implications for individual indicators and goals

Among the 21 topics a large number of indicators and goals remained unchanged, e.g. the goals related to the productivity of resources (1b, Resource productivity) or land use (4, Increase in land use for housing and transport).

With respect to some other indicators, on the other hand, it was felt that there was the need for adjustment in order to make them clearer.

New, altered or amended indicators

The previous indicator 9a (25 year-olds without school leaving certificate and apprenticeship) was changed; it is replaced by a slightly modified indicator setting new goals. The purpose of the change was to increase the information value by including additional age groups in the indicator in order to appropriately portray the special organisation of education in Germany.

The indicators 11 a, b (Intensity of freight traffic; Intensity of passenger transport) were expanded in order to include the aspect of energy efficiency—with respect to the absolute use of energy as well as to the energy use per tonne/passenger kilometre. This change makes it possible to obtain valuable

new insights into the specific environmental impact of transport.

The methodology of recording the nitrogen surpluses (indicator 12a) was changed. To avoid statistical distortions, development will now be represented as a moving three year average in order to depict trends in development more accurately.

In addition, new indicators were chosen for the healthcare sector. Among other bodies, both the Parliamentary Advisory Council on Sustainable Development and the Sustainable Development Council advocated to strengthen the aspect of prevention of a sustainable healthcare policy. In future the proportion of people who smoke and the proportion of obese people will be two important new indicators that are linked with concrete goals. With respect to the 'obesity' indicator, which also in part covers the area of nutrition, it still needs to be clarified on what data these indicators will be based in the future. It will probably only be possible to solve this question over a longer period of time. The microcensus data that are currently used provide a good assessment of the trend, but they are not ideally suited to this issue due to the method in which the data are collected.

Indicator 19 (Integration: Foreign school leavers with a school leaving certificate) has also been changed. As a result of a suggestion from the Parliamentary Advisory Council on Sustainable Development, in the future it will be considered how many foreign pupils left school with a school leaving certificate instead of looking at those without, in order to formulate a positive goal.

In part the indicators themselves were not changed, but the goals were redefined in order to preserve and further develop the level of aspirations of the Strategy.

Old indicators, new goals

There are new goals for the following indicators:
- Indicator 3 (Share of total energy consumption attributable to renewable energies—the previous target has already been exceeded; the new target for 2020: 'at least 30%')
- Indicator 6 (National debt—it is now set as a new goal of the Strategy to achieve, by 2011 at the latest, passing a public budget without net borrowing)
- Indicator 9c (Percentage of students starting a degree course—consolidation after 2010 at a high level)
- Indicator 14a (Premature death—concrete values for 2015)
- Indicator 15 (Crime—new goal: fewer than 100,000 burglaries per year)
- Indicator 16 (Employment rate—increasing the goal for all employees by 2010, new goal for 2020. Parallel to this, new goals for older workers are introduced separately for 2010 and 2020.)
- Indicator 17 (Perspectives for families—new goals for 2020 for the age group of children up to six years old)

There are currently negotiations underway at European level that might have an impact on individual indicators. These will only be developed further once these negotiations have come to an end. This affects indicator 2 (Climate protection), indicator 13 (Air pollution) and indicator 3 (Share of total energy consumption attributable to renewable energies). With regard to primary energy consumption this indicator will be based on final energy consumption as soon as the current discussion on the methods to determine these values at EU level has produced a final result.

With respect to indicator 12b (Development of land for organic farming) the time for reaching the goal of a share of 20% was modified in order to allow for the fact that the decision to introduce ecological farming is incumbent on the individual farms concerned. The Federal Government has decided to create a framework that makes it possible to reach this share in the next few years.

Only to a comparatively small degree will the previous indicators, sub-indicators or goals be discontinued.

Abandonment of indicators, sub-indicators or goals

In order to compensate for the two new indicators in the area of preventive healthcare, the previous indicator 'Satisfaction with health' (14b) was be dispensed with, since it turned out to be insufficiently meaningful. With respect to indicator 17 (All-day care provision for children) the goals will be limited on children between 0 and 6 years. They will be in the political focus of the Federal Government since it is easier for the Federal Government to be active in this field than in the case of older children.

On the other hand the goals particularly addressed during the consultation on indicators 11a (Intensity of freight traffic), 11c, d (Share of rail transport and inland water transport), and 18 (Wage difference between women and men) will remain unchanged. This is because the evidence suggests that it remains important for a sustainable Germany to achieve these goals. They remain goals of the Strategy, be it actually possible to achieve these or not. The measures with which the Federal Government at least in the long-term wishes to achieve the goals will be described following the analysis of the Federal Statistical Office (Chapter B.III.). In the meantime incorporation in the Strategy serves as a visible stimulus to all the players involved to strive for improvements in these areas.

Further discussion

Moreover, a number of changes suggested in the course of the dialogue on sustainability were discussed but not integrated into this Report.

Further changes discussed

- This concerns for example the inclusion of absolute target values for indicators 1a and 1b (energy and resource productivity). Already since the 2006 Indicator Report prepared by the Federal Statistical Office absolute figures have been reported in the indicator. Within the scope of research projects the Federal Government checks the degree to which the accuracy and the ecological descriptive power of the 'Resource productivity' indicator can be improved. The environmental-economic accounting of the Federal Statistical Office currently provides very detailed analyses of the causes and accountability in the area of resources.
- In part the acceptance of a long-term goal of zero hectares for the use of new land was called for in the discussion of indicator 4. In the opinion of the Federal Government, the proposed target of 30 hectares a day should first be achieved before additional targets are adopted—no matter how desirable this target may be. The offer made by the *Länder* in their contribution to this Progress Report to cooperate on this topic is a positive starting point for further activities.
- An additional distinction of the indicator for the diversity of species (indicator 5) in the context of the Strategy for Sustainable Development is not seen as productive; the National Biodiversity Strategy contains a comprehensive set of indicators that are regularly reported on.
- The suggestion of looking at the pre-school development of children using a new indicator, 9d, was also not integrated into the Strategy, since there is no uniform procedure for ascertaining information on this topic in the *Länder*.
- With respect to indicator 10 (Gross domestic product per head) it was challenged during the consultation round whether additional indicators, such as the Gini coefficient used in measuring distribution of income inequity, the Index of Sustainable Economic Welfare (ISEW) or the Human Development Index (HDI) should be used—where necessary additionally. This question is currently assessed by the Federal Government.
- With regard to the development and use of land for agricultural purposes (indicators 12a/b) the question as to the efficiency of land use arose. The creation of a new sub-indicator is still being examined.
- With respect to indicator 13 (Air pollution) the question arises as to the inclusion of particulate matter pollution and the health hazards resulting from it. Whether this takes place is to be assessed once the amended Directive 2001/81/EC, the so-called NEC Directive, of the European Parliament and of the Council on national emission ceilings for certain atmospheric pollutants is adopted.
- Changes to or deletion of indicator 15 (Burglaries) were demanded because it is regarded as not being sufficiently meaningful for questions of sustainability. However for reasons of continuity and because increased personal safety is an aspect of quality of life as one of the four guidelines of sustainability (in addition to intergenerational equity, social cohesion and international responsibility), the Federal Government is keeping the indicator at present. In the long run the question should remain under scrutiny.
- It will take longer to clarify the question as to the value and feasibility of using an aggregated indicator to map sustainable consumption that represents the breadth of the sustainability aspects from the perspective of the consumer would be more suitable than the representation of individual indicators from the perspective of the consumers (for example, climate and energy and resource efficiency). This question will be considered further.

Next steps to be taken

The Federal Government is continuing the discussion of these and other questions on the indicators and goals. This discussion includes the question as to how the indicators and goals can be better coordinated between the national and regional levels in order to make the Sustainability Strategy a real 'national' strategy.

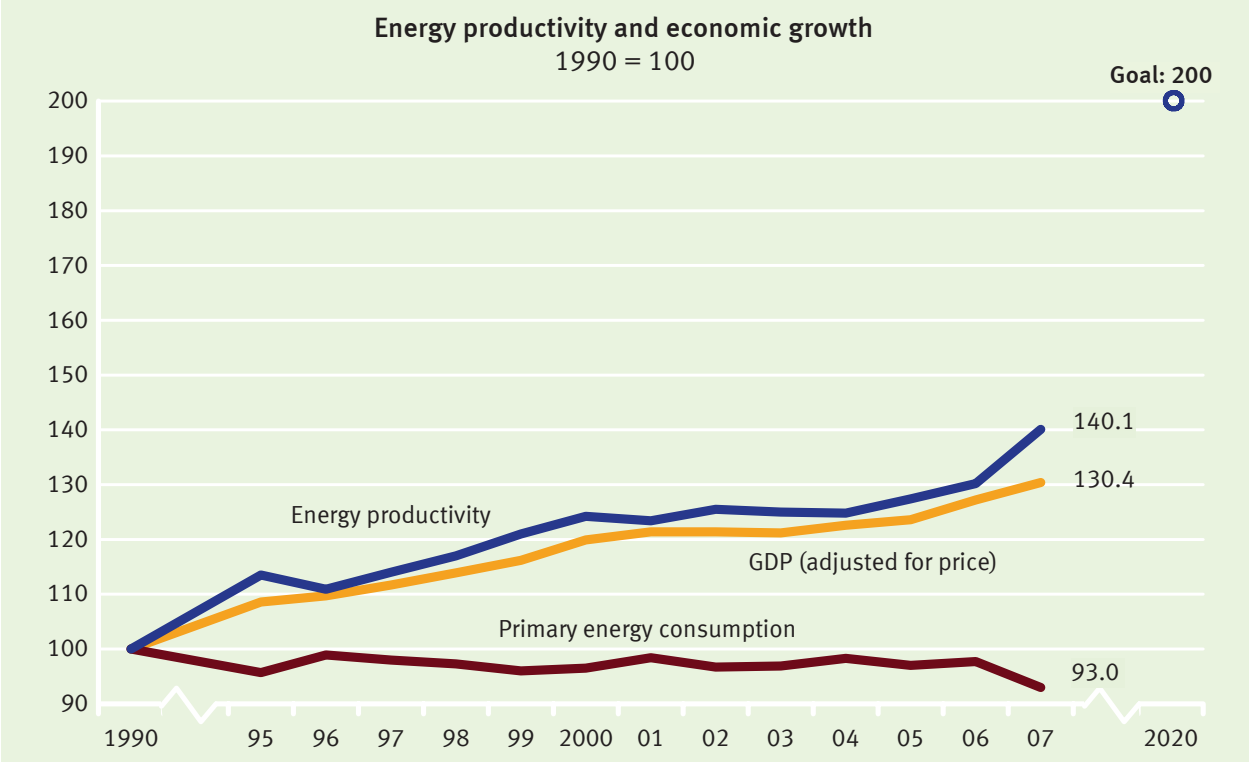
II. Where we stand: Assessment of the progress made relating the sustainability indicators—contribution of the Federal Statistical Office

The following analysis performed by the Federal Statistical Office describes the development of the indicators and the progress in implementing the goals. The technical responsibility for the accuracy of the analysis rests with the Federal Statistical Office.

The Federal Government's conclusions on the Federal Statistical Office's analysis can be found in Chapter B.III.

Resource protection

Using resources economically and efficiently



Source: Federal Statistical Office, Working Group on Energy Balances *(AGEB)*

1a Energy productivity

The use of energy occupies a key position in the economic process because almost every production activity is either directly or indirectly associated with the consumption of energy. Private households use energy particularly for heating their homes and water, using electrical appliances as well as to run motor vehicles. The consumption of energy has a number of environmental effects, such as a detrimental impact on landscapes, ecological systems, the soil, water bodies and ground water due to the depletion of natural energy resources, emissions of harmful substances and greenhouse gas emissions with an effect on climate, the production of waste as well as the use of cooling water involved in converting and consuming energy sources. And, last but not least, the consumption of non-renewable resources is of special importance with regard to safeguarding the livelihood of future generations.

The Sustainability Strategy of the Federal Government takes into consideration the major importance of energy, both from an economic and environmental perspective, by including the 'Energy productivity' indicator (gross domestic product, adjusted for price, per unit of primary energy consumption). The Federal Government is aiming to double energy productivity by 2020 compared to that of 1990.

Energy productivity increased by 40.1% in Germany between 1990 and 2007. Although the increase in productivity indicates more efficient use of energy, it has led to a comparatively insignificant drop in energy consumption (7.0%) in absolute terms, because most of the increase in efficiency was used up again due to economic growth of 30.4%. In the period between 2000 and 2007 energy productivity rose by a yearly average of 1.7%. This increase was partly accounted for by a very large jump in 2007 compared with 2006 of 7.6%. The increase in 2007 can be attributed to a large reduction in energy consumption of 4.8%—strongly influenced by mild weather—and, at the same time, strong growth in the economy of 2.5% in comparison to the previous year. In order to achieve the goal an increase in the productivity of energy in the remaining period until 2020 of an average of 2.8% would be necessary. A continuation of the previous average pace of development would therefore not be sufficient to achieve the goal of doubling energy productivity by 2020.

In private households final energy consumption (excluding petrol and diesel for motor vehicles) rose by 12.5% between 1990 and 2006, compared with 3.8% in the period from 2000 to 2006. The increased consumption in households is the result of rising demand for energy services. Relating to heating this increase is due to an increase in living space. The increase in electricity consumption is attributable in particular to the increase in the number of electrical appliances used in households. Even though it was possible to slow down the increase in consumption thanks to improved energy efficiency in the use of electrical appliances and apartments, this has not yet led to a complete compensation of the factors that cause consumption to increase.

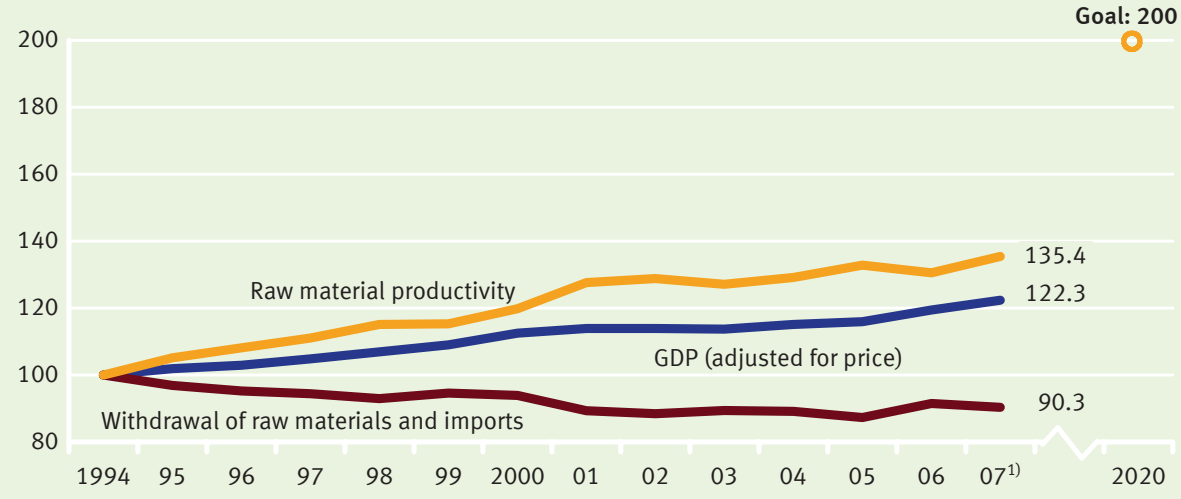
Consumption of energy in the transport sector rose by a total of 10.9% between 1990 and 2006. On the other hand, consumption declined by 4.1% between 2000 and 2006. A downward trend in the use of petrol and diesel for road traffic is evident (by -8.1% from 2000 to 2006; see also indicators 11a and 11b), while the consumption of aviation fuel shows a large increase (21.3% between 2000 and 2006). The figures on petrol consumption for road traffic do not include German residents' consumption abroad (referred to as 'petrol-tank tourism').

The domestic energy industry is characterised by an increasing import dependency. The percentage of imports in primary energy consumption rose significantly between 1991 and 2007 from 63.3% to 71.5%.

Resource protection

Using resources economically and efficiently

Raw material productivity and economic growth
1994 = 100



1) 2007 preliminary results.

Source: Federal Statistical Office

1b Raw material productivity

The use of raw materials is indispensable to economic development. However it also has environmental implications. Moreover, the non-renewable natural resources consumed today will no longer be available to future generations. For this reason resources should be used sparingly. The Federal Government is pursuing the target of doubling raw material productivity by 2020 (based on the rates in the base year of 1994).

The term 'raw material productivity' expresses the amount of abiotic primary materials (in tonnes) used to produce one unit of gross domestic product (in EUR, adjusted for price). Abiotic primary materials are the materials withdrawn domestically—excluding agricultural and forestry products—as well as all imported abiotic materials (raw materials, semi-finished and finished products).

Raw material productivity increased by 35.4% between 1994 and 2007. While use of materials decreased (-9.7%), the gross domestic product went up by 22.3%. Since 2002 the increase in productivity slowed down.

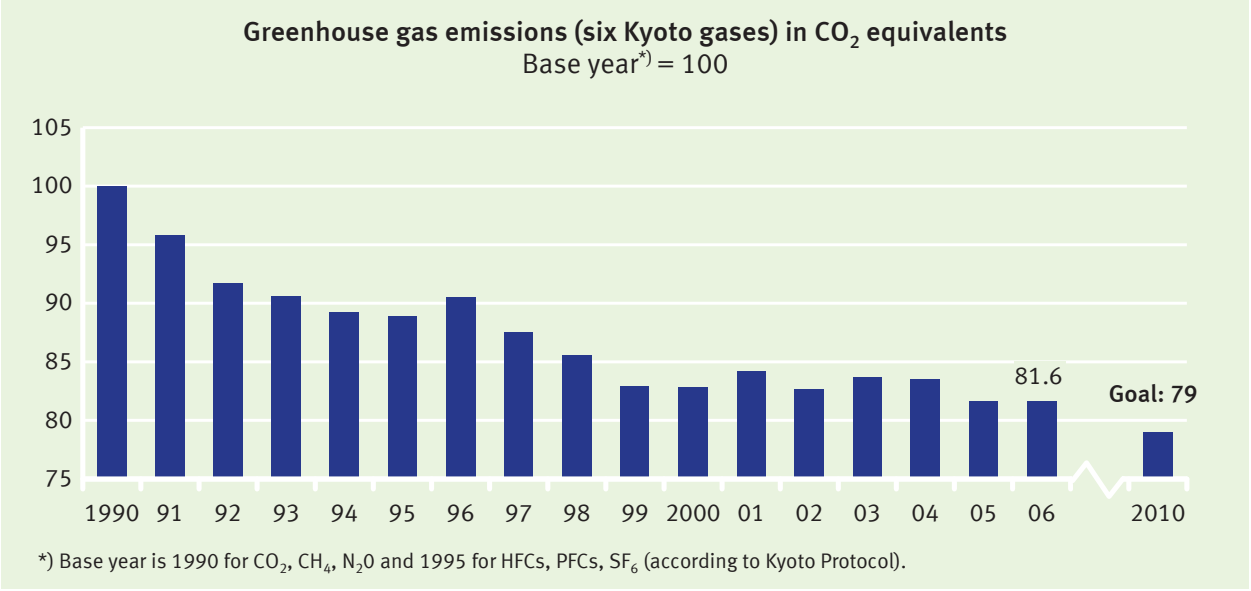
Between 2005 and 2006 even a slight decline in productivity was recorded. It increased again in 2007. In comparison with the previous year the use of materials decreased slightly (-1.3%), while the gross domestic product grew by 2.5%. Although this indicator shows a trend in the right direction, its previous growth rate would not be sufficient to achieve the goal set.

The favourable trend in raw material productivity between 1994 and 2007 is to be attributed chiefly to structural change towards less resource-intensive industries: these industries have expanded (especially the service sector), while industries with high material consumption, such as the construction industry (which accounts for 44% of total primary material use) or other manufacturing fields, have tended to shrink (see indicator 10). The use of raw materials for construction decreased by 26% or 211 million tonnes between 1994 and 2007. In contrast the use of ores and their products increased significantly during this period (by 59% or +52 million tonnes). The amount of fossil energy sources used has increased only slightly (+2.5%) since 1994. The increase in overall productivity mentioned above was caused by this decrease in the use of materials and a rise in the gross domestic product.

An important factor in interpreting the trend in the resource indicator is also that the demand for materials is increasingly covered by imports. While the withdrawal of raw materials in Germany decreased by 254 million tonnes (-23%) between 1994 and 2007, imports of raw materials as well as semi-finished and finished goods increased by 109 million tonnes (+28%). The proportion of imported goods in the overall use of primary materials increased from 26% in 1994 to almost 37% in 2007. Increased imports of semi-finished and finished metal products (+116%) and the replacement of domestic hard coal by imported sources of energy (see indicator 1a) are particularly important in terms of quantity. Domestic nature is thus increasingly protected and the environmental implications related to the withdrawal of raw materials and their processing into semi-finished and finished goods are shifted abroad.

Climate protection

Reducing greenhouse gases



Source: Federal Environment Agency

2 Greenhouse gas emissions

Climate change is an enormous challenge for mankind. Germany has thus committed itself to a reduction in its emissions of the six greenhouse gases and greenhouse gas groups in the Kyoto Protocol by 21% until 2008–2012 compared to the year 1990. As Germany's contribution to an international climate protection agreement after the year 2012, the Federal Government is offering to reduce these emissions by 40% below the levels in 1990

by 2020. This offer is conditional on the European Union reducing its emissions in the same period by 30% compared to 1990 levels and that other states adopt comparable ambitious targets as a matter of policy.

According to the Kyoto Protocol, the following are included as greenhouse gases: carbon dioxide (CO_2), methane (CH_4), nitrous oxide = laughing gas (N_2O), partly halogenated hydrofluorocarbons (HFCs), perfluorocarbons (PFC) and sulphur hexafluoride (SF_6). These gases are emitted chiefly during the burning of fossil energy sources, such as coal, crude oil and natural gas. Furthermore, they occur in other activities not involving energy sources, for example in the use of solvents and the employment of minerals as fertilisers. In Germany greenhouse gas emissions occur mainly in manufacturing industries followed by those occurring in private households, service industries and farming.

Since 1990 Germany has substantially reduced its greenhouse gas emissions. Compared to the base year set out in the Kyoto Protocol (1990/1995), aggregate carbon dioxide equivalent emissions had fallen by approximately 226 million tonnes or 18.4% by 2006. To reach the Kyoto target an additional reduction by 2.6 percentage points must be achieved by the target year. In the previous five years leading up to 2006 the indicator moved only slightly in the right direction. The target would therefore be achievable by the target year. Preliminary results from the Federal Environment Agency for 2007 point to an increased reduction of greenhouse gas emissions (Federal Environment Agency press release, 16/2008). It should be taken into account that for 2007 one-off effects, such as mild winter temperatures or altered consumer habits in the wake of an increase in VAT at the beginning of the year, played a role (final results for 2007 will only be available at the beginning of 2009).

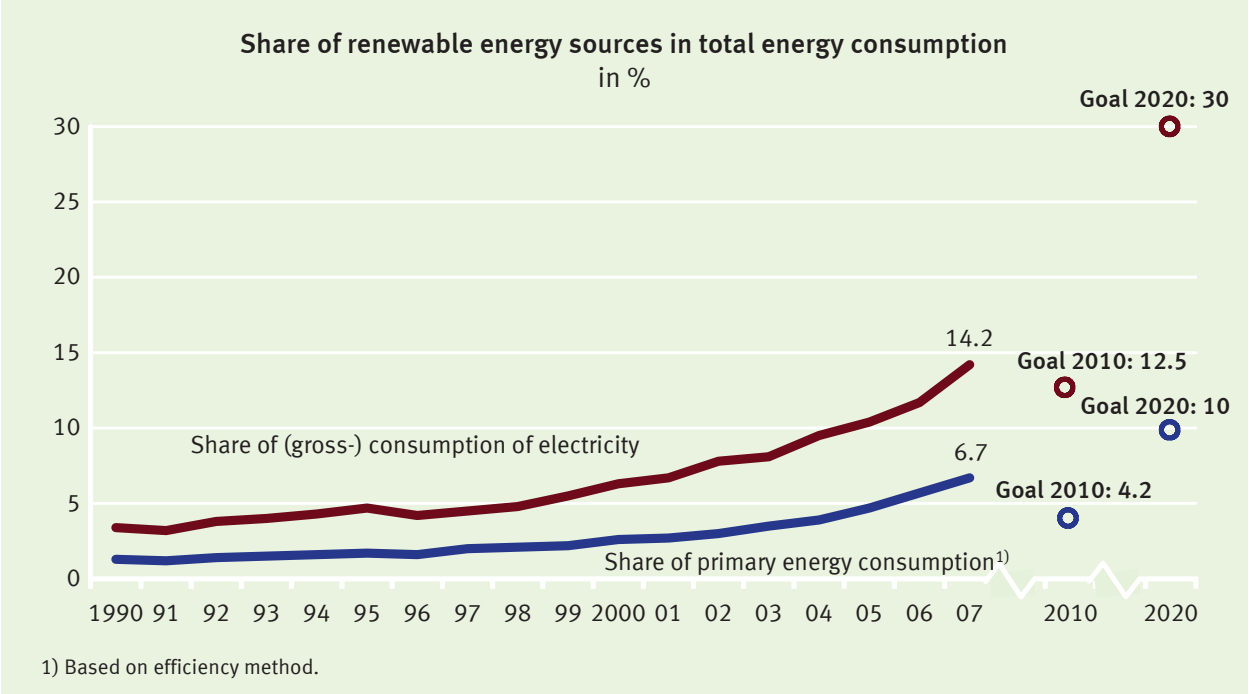
With 87.6% carbon dioxide accounted for the larges share in greenhouse gas emissions in 2006 by far. However, between 1990 and 2006 these emissions fell by 151.9 million tonnes or 14.7%. The overwhelming part of the CO_2 reduction took place between 1990 and 1995, a total of 111.4 million tonnes. Between 1995 and 2006, on the other hand, CO_2 emissions were reduced by only 40.5 million tonnes. The large reduction in emissions between 1990 and 1995 is attributable especially to the restructuring process in the *New Länder* (closure of obsolete factories and other facilities), the increases in efficiency in power plants (increase in energy efficiency) as well as changes to the energy mix, including the increased use of emission-free or low-emission sources of energy.

At least a good three-quarters of the direct CO_2 emissions result from the activities of business and just under one-quarter from those of private households. However, the reduction between 1995 and 2005 can be ascribed to a fifty-fifty split between both areas. Nevertheless it should be noted that through their demand for electricity private households cause additional emissions in the business sector, in other words in the area of 'production and distribution of energy (gas and electricity)'.

Most areas of production were able to reduce their CO_2 emissions between 1995 and 2005, but the growth-related increase in emissions, especially in the significant areas of 'metal production' (+8.0%) and 'production and distribution of energy (electricity, gas)' (+2.7%), dampened the total reduction. The indicator has various cross-references, for example, to indicators 1a, 3, 4, 5, 11 and 12.

Renewable energies

Strengthening a Sustainable Energy Supply



Source: Working Group on Renewable Energies—Statistics *(AGEE-Stat)*, Working Group on Energy Balances *(AGEB)*, *Zentrum für Sonnenenergie- und Wasserstoffforschung Baden-Württemberg (ZSW)* (Centre for Solar Energy and Hydrogen Research Baden-Württemberg), Federal Ministry for the Environment, Nature Conservation and Nuclear Safety; June 2008

3a, b Share of renewable energy sources in total energy consumption

The reserves of important fossil energy sources such as oil and gas are limited, and their use is associated with greenhouse gas emissions. The goal of the Sustainability Strategy is therefore to promote the development of renewable sources of energy. Renewable sources of energy are energy sources which can be derived from natural processes which are constantly regenerated. Renewable energies include hydropower, wind power, solar energy and geothermal energy, but also biomass such as firewood and the biodegradable portions of domestic refuse.

The development of the use of renewable energy is measured in the Sustainability Strategy by means of the indicators 'Share of renewable energy in total primary energy consumption' and 'Share of electrical power from renewable sources in total power generation'. The aim of the Federal Government is to increase the share of renewable energy in primary energy consumption to 4.2% and the share in electricity production to 12.5% by 2010. In addition, the share in primary energy consumption should increase to 10% by 2020 and the share in gross electricity consumption to at least 30%. After this, further continuous expansion is planned. The goals for 2010 have already been reached ahead of time, in 2005 (with the share in primary energy consumption reaching 4.7%) and in 2007 (with the share in gross electricity consumption reaching 14.2%). For the partial indicator of the share in primary energy consumption, the measurement indicator (as final energy) and the goal will be modified at a future date on the basis of the EU legislation currently undergoing preparation.

Between 1990 and 2007 the share of renewable energy in primary consumption rose from 1.3% to 6.7%. The share in electricity consumption increased from 3.4% to 14.2%. The upward trend in the last six years has been especially pronounced since the introduction of the Directive 2001/77/EEC of the European Parliament and the Council on the promotion of the electricity produced from renewable energy sources and the amendments to the 'German Renewable Energy Sources Act' *(EEG)* in 2004. The latter obliges producers of electricity to give precedence to renewable energy sources when buying electricity. For both indicators the target values for 2010 were exceeded in 2007.

In 2007 the share of the individual renewable energy sources in the total amount of energy produced from renewable energies varied greatly. 68% came from bio-energies, 18% from wind power and 9% from hydropower.

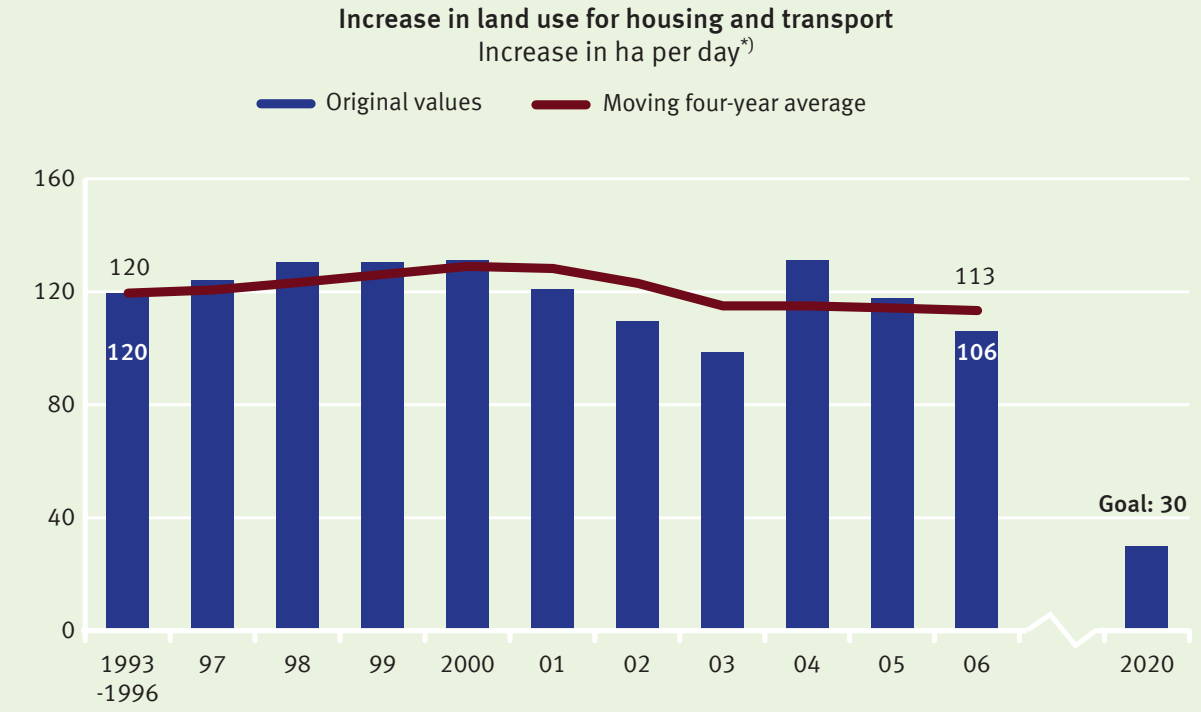
Renewable energy was primarily used in the areas of electricity generation (39%) and heat production (40%). The biogenic fuels area accounted for 21% of the total energy produced from renewable energies. Since 1st January 2007 all businesses which place fossil fuels into circulation are obliged at the same time to release a specified minimum quantity of biofuels.

The accelerated increase of the share of renewable energies in electricity generation since 2000 is due among other things to the growing significance of wind energy. For example, electricity generation from wind power increased from 7,550 gigawatt hours (GWh) in 2000 to 39,500 GWh in 2007 (+420%). In 1995 it was still 1,800 GWh. Electricity generation from the entire biomass increased more than fivefold between 2000 and 2007. The contribution of hydropower to the total generation of electricity from renewable energies stood at 20,700 GWh in 2007.

Renewable energies significantly contribute to cutting emissions; thus the indicator displays a positive correlation to indicator 2 'Greenhouse gas emissions'. Calculations of the Working Group on Renewable Energies—Statistics showed that the use of renewable energies in 2007 enabled the emission of about 115 million tonnes of the climate gas CO_2 to be avoided. The demand for biomass from renewable raw materials can lead to competition for land used in the cultivation of foodstuffs and fodder (see also indicator 12b) or have negative consequences for land use (indicator 5).

Land use

Sustainable land use



*) The land use survey is based upon the evaluation by the land registries of the *Länder* which document actual land use. Because of the transition work currently affecting the official registries (recoding of the types of use as part of digitalisation) the illustration of the increase in land use is distorted on the present edge.

Source: Federal Statistical Office, Federal Office for Building and Regional Planning

4 Increase in land use for housing and transport

Undeveloped land, which is intact and not affected by large-scale housing development, is a limited resource. Besides the direct environmental consequences of the increase in land used for housing and transport—such as the loss of natural soil functions through sealing, the loss of fertile land or areas still close to their natural state as well as the loss of biodiversity—each time new construction areas are opened up close to towns and outside previous core housing areas this also generates additional traffic. This leads to further

environmental impact through noise, increased use of energy and the emission of pollutants. Moreover, such development always involves increased technical and financial costs for the provision of infrastructures. The Federal Government's goal is, therefore, to limit the use of new areas for housing and transport purposes to 30 hectares a day by 2020.

Although the growth in housing and traffic areas has in fact lessened in recent years, there is still no unambiguous trend discernible. Continuing the development of the last few years is not sufficient to reach the proposed goal.

The rate at which areas used for housing and transport are currently increasing cannot be accurately assessed using the results of the land survey, because the progression of the series has been discontinuous. The results for 2001 to 2003 for example probably overstate the respective decline. This effect has subsequently been balanced out again. The increase in areas used for housing and transport appears to have been slowing down relatively continuously over the whole period since 2000 (see the moving four-year average). Such a trend would roughly correspond to the development of investments in construction, which showed a total (price-adjusted) decrease of 18% between 2000 and 2005. How far the renewed increase in building investments since 2006 (see indicator 7) will also affect the increase in areas used for housing and transport remains to be seen.

Between 1992 and 2006 the area used for housing and transport increased by 15.2%. This corresponds to an average growth of 120 hectares a day. Within this, the area used for housing rose by 20.7% (97 hectares per day) while the area used for transport increased by 7.2% (23 hectares per day). The kilometres travelled by road between 1992 and 2004 increased by 18.2% in comparison to a 5.2% increase in the land area taken up by road traffic. This means that the existing roads were used increasingly intensively (see also indicators 11a, 11b and 11c).

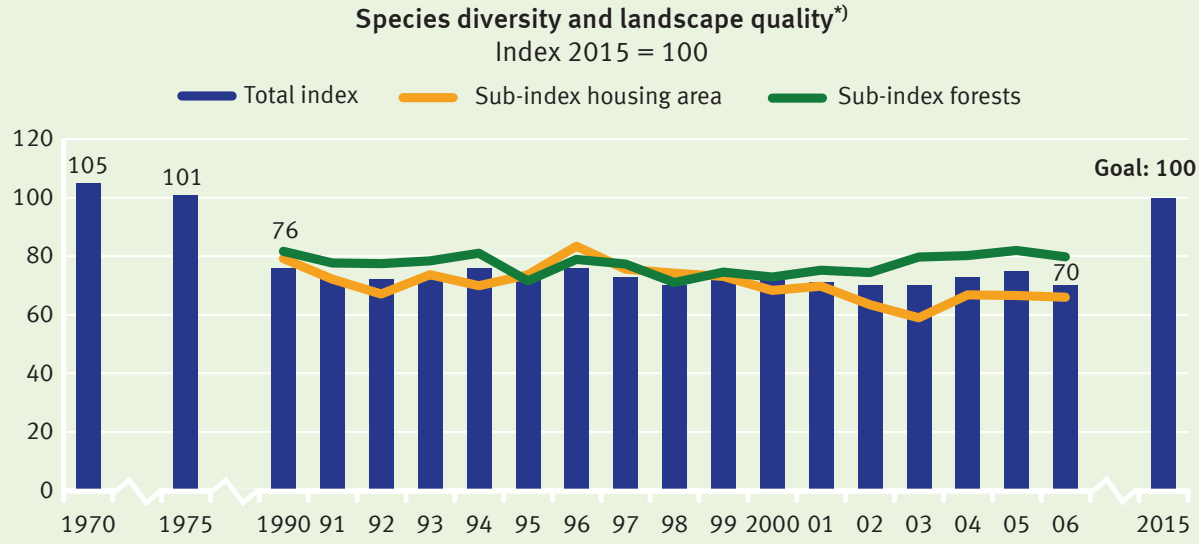
About 52% of the area used for settlement was taken up by private households in 2004 (the calculation is only possible on a four-year cycle)—mainly for residential purposes. Areas used for production activities made up just under 43% of this area. 5.3% was unused.

Between 1992 and 2004 the settlement area used by private households went up by 22.1% (61 hectares per day). Thus it increased considerably more than the number of residents (+1.9%). A major reason is the clear increase in the demand for living space, which rose in the period in question from 36 m^2 to 42 m^2 per head.

On the other hand, more value creation was generated from the continually decreasing area used for housing. Area intensity (the ratio of the housing area used for production activities to the sum of the gross added value achieved through these activities, adjusted for price) fell by 5.1%. The increase in the housing area claimed for production was therefore lower than the increase in economic performance. This decoupling of overall economic production and the corresponding use of housing areas is, however, not attributable to a more economical use of land by the individual sectors, but rather to the move by the economic structure towards less land-intensive production activities, such as the expanding service sector (see also indicator 10).

Species diversity

Conserving species—protecting habitats



*) The historical values for 1970 and 1975 have been reconstructed. For some bird species in the habitats of coasts and seas, inland waters and in the Alps, values for individual years have been extrapolated.

Source: Federal Agency for Nature Conservation (2008)

5 Species diversity and landscape quality

A wide diversity of animal and plant species is a fundamental prerequisite for an efficient natural environment and is an essential basis for our human livelihood. Nature and the landscape in Germany bear the marks of centuries of use. Small-scale protection of species and habitats alone will not be sufficient to preserve the diversity which has been created by use and has also arisen naturally. What is required instead are sustainable forms of land use throughout the entire landscape, restrictions on emissions and a gentle way of dealing with nature. In this way species diversity can be preserved and at the same time the quality of human life can be secured.

This indicator provides information on the quality of the landscape, sustainability of land use and species diversity. The calculation of the indicator is based upon the development of the stocks of 59 bird species which represent the most important types of landscape and habitat in Germany (farmlands, forests, settlements, inland waters, coasts and seas and the Alps). The size of the bird populations reflects the suitability of the landscape as a habitat for the bird species chosen. Since in addition to birds other species are also associated with a richly structured landscape with intact, sustainably used habitats, the indicator also indirectly indicates the development of numerous other species in the landscape and the sustainability of land use. A body of experts has determined target population values for 2015 for each individual species, which could be reached if the European and national legal provisions relating to nature conservation and the guidelines on sustainable development are implemented quickly. Every year a value for the overall indicator is calculated based on the degree to which the goals for all 59 bird species have been achieved.

The value of the indicator for biodiversity in 1990 lay clearly below the reconstructed values for 1970 and 1975. In the last ten years of observation (1997–2006) the indicator value has hardly changed and has failed to show any demonstrable development trend. In 2006 it stood at approximately 70% of the target value for 2015. If development remains at this level, then the goal can not be reached by the designated time without considerable additional efforts being expended by the Federal Government, the *Länder* and the municipalities in as many policy areas as possible which are related to nature and landscape conservation.

The values of the six sub-indicators, which at the beginning of the 1990s differed strongly, had moved closer together by 2006. Between 1997 and 2006 the sub-indicators for settlement areas as well as for coasts and seas showed a significant downward trend, while the sub-indicators for farming land, inland waters and the Alps

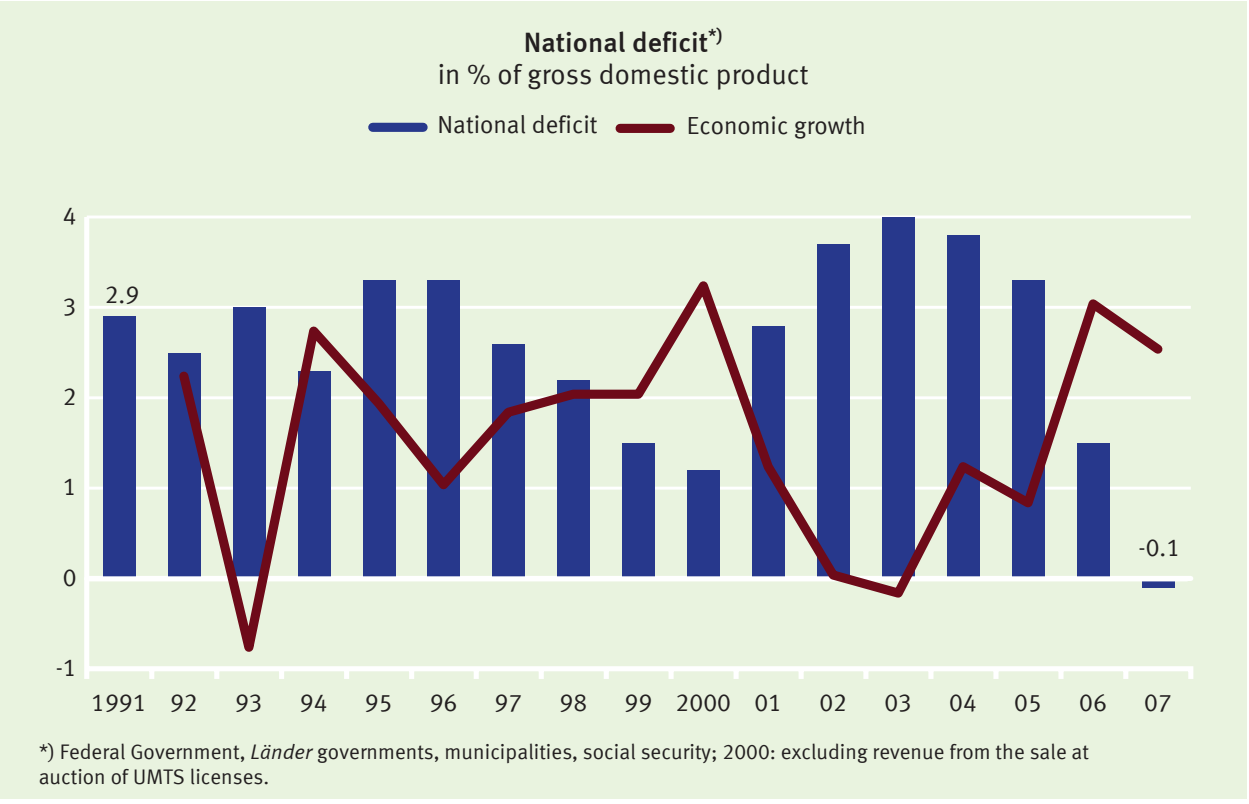
stagnated. Only the sub-indicator for forests has shown any positive development since 1997. In 2006 it reached 80% of the goal value, while the other sub-indicators at this time displayed a level of only about two thirds of their target values.

The chief causes of the decline in species diversity are the intensification of farming and forestry use, the fragmentation and over-development of the countryside, the sealing of areas and the depositing of substances (for example, acidifiers or nutrients). In settlement areas the loss of near-natural areas and village structures because of building activities and soil sealing is having a negative effect. Endangering factors for habitats on the coast include disturbances due to increased recreational use and overbuilding, for example through coastal protection measures. In forests the promotion of near-natural forest management should display positive effects.

The climate change caused mainly by greenhouse gas emissions is today already leading to a shift in the distribution areas of many species and is beginning to alter landscapes in Germany. Climate changes caused by human activity could in the future considerably alter both species diversity and the range of species through the migration and extinction of animal and plant species. The increasing cultivation of fuel crops can also have an effect on the quality of the landscape and species diversity. As yet it remains to be seen in what ways the demographic changes—specially as a result of land used for agriculture being given up to migration areas—will affect species diversity and the quality of the landscape.

National debt

Consolidating the budget—creating intergenerational equity



*) Federal Government, *Länder* governments, municipalities, social security; 2000: excluding revenue from the sale at auction of UMTS licenses.

Source: Federal Statistical Office

6 National deficit

Sound public finances serve to provide intergenerational equity and promote growth and employment by means of a sustainable and fair system of taxes and charges. An essential element of a sustainable financial policy is the consolidation of public finances. The goal of the present Federal Government is to achieve a structurally balanced national budget. For the Federal Government, the goal is being extended to ensure that the budget is free from net borrowing from 2011 onwards.

At European level national debt of the member states is limited amongst other things by the 'Maastricht criteria', which the member states of the Euro zone have agreed to observe. For the annual deficit (expenditures less revenue) of the state these provide for a reference value of a maximum of 3% of GDP.

In 2007, for the first time since 1989 with the exception of a special development in 2000 due to the proceeds of the UMTS auction, Germany showed a small positive financial balance of 3.1 billion euros, after a deficit of 35.9 billion euros the previous year. Between 2002 and 2005 the deficit limit permissible under the Maastricht agreement was exceeded every year. An important reason for the development in this period was the persistent recession and insufficient growth. The growth rates of real GDP between 2001 and 2005 were only between -0.2% and +1.2% (see indicator 10). In 2006 an economic turnaround took place. In 2006 and 2007 GDP rose by 3.0% and 2.5% respectively compared to the previous year.

Following the reunification of Germany the annual national debt rose continuously until 2003, from 43.8 billion euros in 1991 to 87.3 billion euros in 2003. In 2004 and 2005 the national debt remained high virtually without change. In 2006 and 2007 a reduction of the debt took place on all levels (national level, regional level, municipalities, social security). In 2007 the federal budget was still in deficit, but only to the sum of 18.9 billion euros. The budgets of the *Länder* and municipalities, on the other hand, displayed surpluses. Social security was able to increase its surplus to 10.4 billion euros. These developments led to the State's achieving a small budget surplus (+3.1 billion euros) overall in 2007.

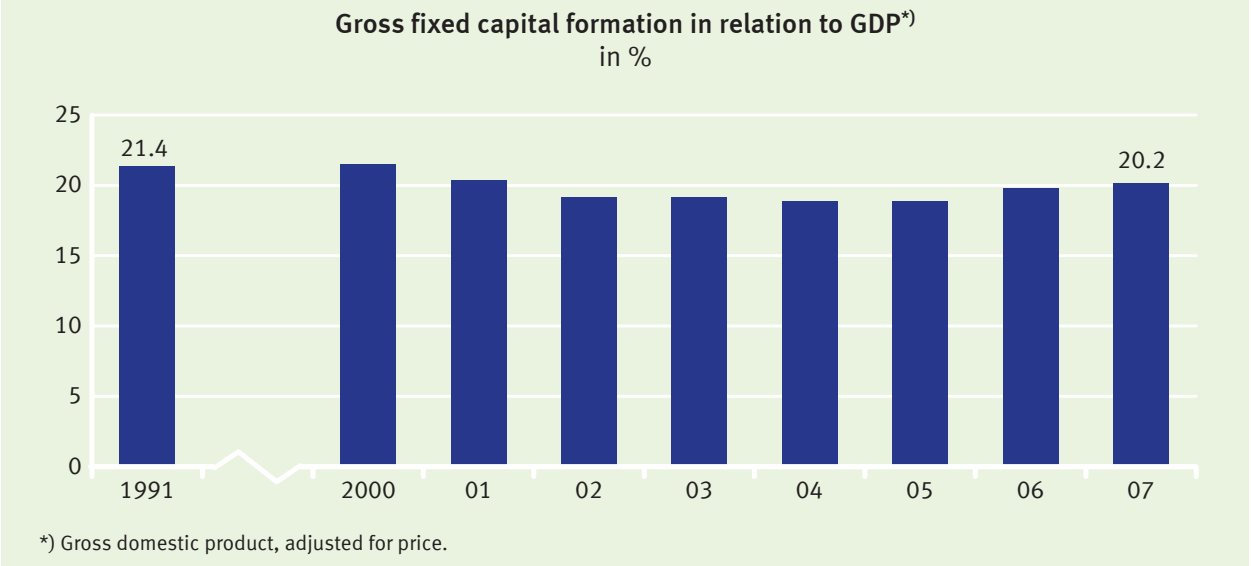
Since 2004, revenues have increased more strongly than expenditure. In particular in 2006 and 2007 a strong increase in tax revenues of 7.6% and 8.6% was recorded. Total State revenues increased to 1,065 billion euros. In 2007 taxes amounted to 576.3 billion euros, or 54.1% of total revenues. Expenditure went up in contrast only by a small amount. The largest section of expenditure, monetary social security benefits totalling 418.4 billion euros (pensions and annuities, health insurance payments and unemployment insurance amongst others) accounted for 39.4% of overall expenditure. These expenditures were declining, so for example cash payments from unemployment insurance were just under 23.0% of their value the previous year, and payments for type II unemployment benefit (Arbeitslosengeld II) were 13.4% of the previous year's figure. In 2007 compensation of employees amounted to 168.0 billion euros, corresponding to a 15.8% share of expenditure.

Expenditure as a proportion of GDP decreased from 45.3% in 2006 to 43.8% in 2007. In 2003 this proportion still amounted to 48.5%. In particular the proportion of GDP attributable to monetary social security benefits fell to 17.3% in 2007 (2003: 19.8%).

In 2007 just over 56% of public spending were accounted for by social benefits, such as payments from the statutory pension, health and unemployment insurance providers, or social welfare. This expenditure item rose by 12.0% between 2000 and 2007. In view of an increase in unemployment figures in the same period of 470,000 and a clear rise in the number of people drawing pensions, the increase in expenditure would have been considerably higher without the changes made to the social security benefits system, such as the structural reforms of Agenda 2010, the reform of the health care system and the limit placed upon pension adjustment rates.

Provision for future economic stability

Creating favourable investment conditions—securing long-term prosperity



Source: Federal Statistical Office

7 Gross fixed capital formation in relation to GDP

Economic performance and the competitiveness of the national economy essentially depend upon business and State investments. In particular, investments in new equipment and intangible assets lead to innovations being implemented and markets—and thus also jobs—being secured or expanded. At the same time investments can contribute to increasing the energy and resource efficiency of the economy, for example, via energy saving measures in buildings, introducing more environmentally efficient production technologies or manufacturing more environmentally efficient goods. On the other hand, investments in building, insofar as they are expansion investments, involve considerable use of materials and additional exploitation of settlement and transport areas (see the environment-related indicators, e. g. 1b and 4).

Gross fixed capital formation includes investments in buildings (residential and non-residential), equipment (machinery, vehicles, tools) and other assets (intangible assets, such as software and copyrights, property transfer costs, production livestock).

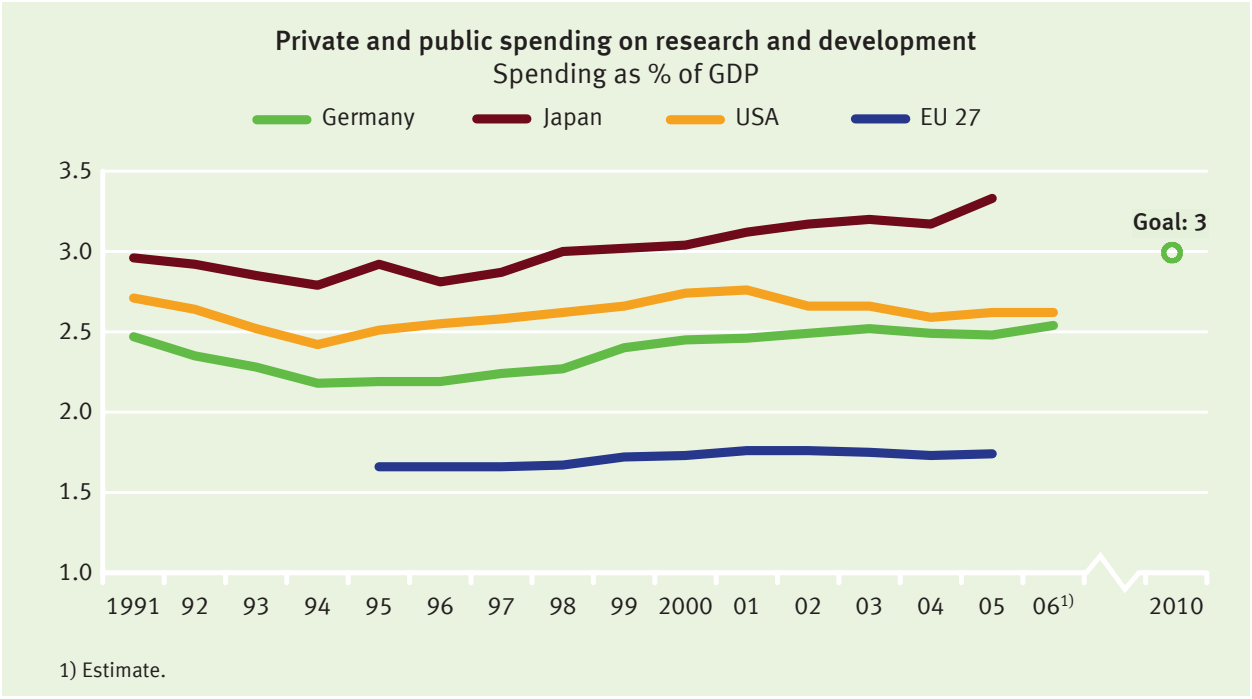
The rate of investment (the ratio of price-adjusted gross fixed capital formation to gross domestic product) in Germany between 1991 and 2000 was about 21%. In the following years it remained at around 19%. From 2006 the indicator rose again and reached a level of 20.2% in 2007.

Following a retrograde development of investments between 2000 and 2004, a turnaround occurred in 2006: capital investments (adjusted for price) with a growth rate of 7.7% compared to the previous year increased at a much more pronounced rate than GDP, which achieved growth of 3.0%. In 2007 this strong growth in investments continued with an increase of 4.3%, compared with an increase in GDP of 2.5%. The investment ratio increased to 20.2%.

The upsurge in investment activity could already be seen in machinery and equipment in 2004. Since 2004 machinery and equipment purchases have increased sharply: in 2004 by 4.5%, in 2005 by 6.0%, in 2006 by 11.1% and in 2007 by 6.9% (in each case in comparison to the previous year). In particular, it was dynamic developments in investments in data processing equipment and vehicles which contributed to this trend. Since 2004 investments in machinery have also displayed an increase compared with previous years. In 2006 construction investments also displayed an upward trend for the first time since 1999. Investments in both residential and commercial property have contributed to this increase. While the increase in residential building was only slight in 2007 at 0.3%, non-residential building also continued to grow strongly in 2007 with an increase of 3.8%. Other investments have shown steady growth since 1991, and in 2006 and 2007 especially strong growth of 8.3% (2006) and 8.0% (2007) in comparison to the previous year.

Innovation

Shaping the future with new solutions



Source: OECD, Main Science and Technology Indicators 2007

8 Private and public spending on research and development

Spending on research and development (R&D) is a significant parameter in determining the pace of innovation of an economy, although not the only one. The higher the spending, the better the prospects of a more dynamic development of productivity, stronger economic growth, improved competitiveness and, last but not least, the chances of our production and consumer patterns developing further in the direction of sustainability.

This present indicator includes spending on R&D by industry, public institutions and institutions of higher education as a percentage of gross domestic product (GDP). In 2002 the Council of Barcelona set a European goal for the share of expenditure on R&D of 3% by 2010, and the Federal Government incorporated this goal for Germany early on as part of its National Sustainability Strategy. After 2010 the efforts of all involved need to continue in order to guarantee Germany's innovative capacity.

In 2006 overall R&D expenditure in Germany amounted to 58.9 billion euros, equivalent to 2.5% of GDP. In comparison, in the USA in 2006 this value stood at 2.6% and in Japan 3.3% in 2005. Both the EU 15 and the EU 27 regions showed significantly smaller proportions of GDP devoted to R&D (1.9% and 1.7% respectively in 2005). Since the middle of the 1990s this proportion has increased in Germany by about 0.3 percentage points, although since 2000 only a very tiny increase has been evident.

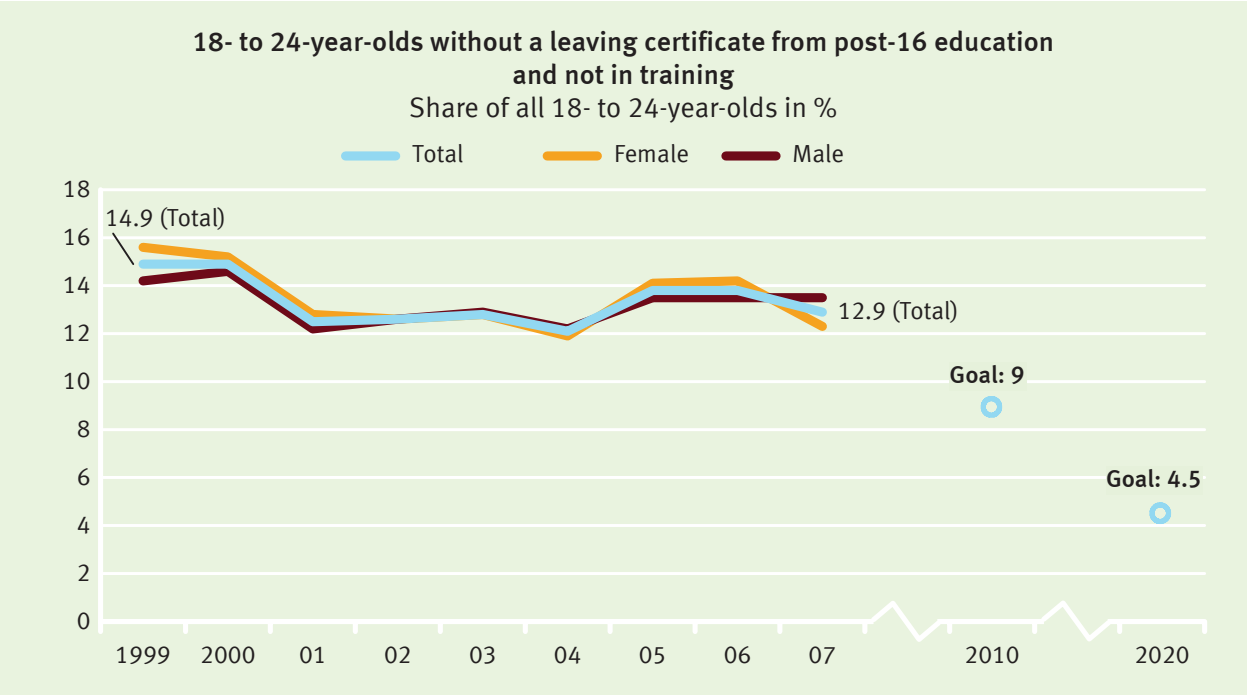
Internal research within industry accounted for by far the largest share of R&D expenditure at around 70%, 16% was spent within institutions of higher education and just under 14% by both public and private non-profit research institutions. Staff employed in R&D in 2006 comprised around 490,500 full-time equivalents (FTE), with only the proportion of their working hours attributable to the area of R&D being taken into consideration. Some 64% of the human resources are attributable to business, 20% to institutions of higher education and 16% to public and private non-profit research institutions.

With regard to disciplines, in both the public and private non-profit research institutions the natural and engineering sciences played a particular role (47% or 28% respectively of the R&D expenditure in 2006 in this area). Research in the humanities and social sciences accounted for 13% of expenditure, human medicine for 6% and agricultural sciences for 5%.

R&D activities in business focus on the sectors of vehicle construction, electrical and electronic engineering, the chemical industries (including the pharmaceutical industry) and mechanical engineering—altogether comprising around 83% of expenditure in private enterprise. The automotive industry alone in 2006 spent about 12.4 billion euros on R&D (source: scientific statistics of the Stifterverband).

Education and training

Continuously improving education and vocational training



Source: Federal Statistical Office

9a 18- to 24-year-olds without a school leaving certificate

The State educational system and the dual system of vocational training are the cornerstones of future-orientated qualifications for young people in Germany. A lack of school leaving and vocational qualifications means a risk of poverty and a strain on the social system. The Federal Government's declared aim is to ensure that all young people leave school with qualifications and go on to obtain an apprenticeship or complete a university degree course.

This education indicator describes education deficits by showing the proportion of early school leavers. This means the proportion of all 18- to 24-year-olds who currently do not attend any school or institution of higher education and are also not involved in any further education and hold no qualifications from post-16 education (university entrance level or completed vocational training). This means that young people who for example have successfully completed the *Hauptschule* or the *Realschule* (level 2 of the International Standard Classification of Education) but subsequently did not complete vocational training or did not qualify for university entrance or are no longer involved in the process of education are counted among those who are early school leavers. Together with the *Länder* the Federal Government has adopted the goal of reducing the proportion of early school leavers to 9% by 2010 and to 4.5% by 2020. The view of the EU is that by 2010 the proportion of early school leavers should not exceed 10%. If the average annual developments in the five years leading up to 2007 remain unchanged, and efforts are not increased, then the goal which has been set under the German strategy will clearly not be reached.

In 2007 all together there were 867,000 young people without an apprenticeship or an equivalent school leaving certificate. Between 1999 and 2007 the proportion of such young people amongst 18- to 24-year-olds decreased from 14.9% to 12.9%, but in 2005 and 2006 it still stood at around 14%. Since 1999 the gender-specific figures of the indicator have deviated from the total values to differing extents. In 2007 the proportion of young women stood at 12.3%, lower than that of young men at 13.5%.

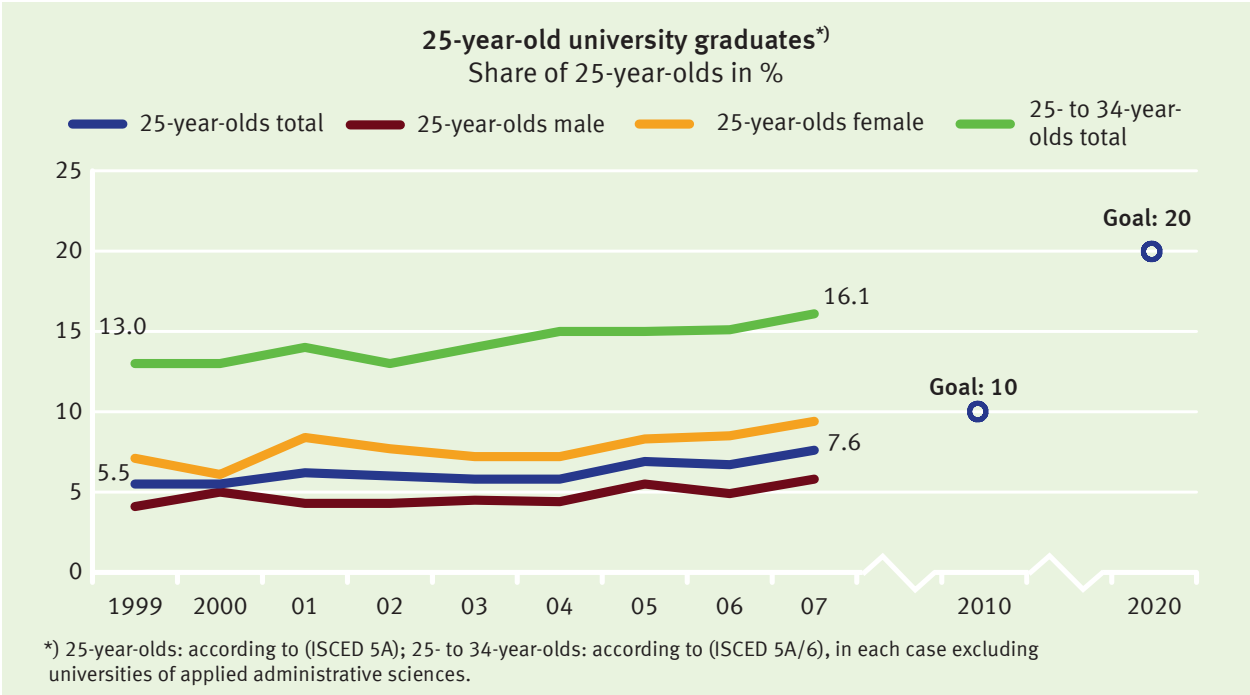
In terms of the proportion of early school leavers, the school statistics show that in 2006 a total of around 75,900 young people (7.8% of the graduating class) left school without a *Hauptschulabschluss* ('general school leaving certificate'). This proportion has hardly diminished in comparison to 1992. In the case of young women the proportion continues to be markedly smaller (5.9%) than that of young men (9.7%).

In 2006 just under 24.4% of all school leavers obtained a *Hauptschulabschluss*, some 41.1% a *Realschulabschluss* ('intermediate certificate'), 1.5% a *Fachhochschulreife* ('advanced technical college entrance qualification') and 25.2% an *allgemeine Hochschulreife* ('general higher education entrance qualification'). The percentage of school leavers with a *Hauptschulabschluss* has declined since 1992 by 2.6 percentage points, whereas the proportion achieving more significant school leaving certificates has increased by 3.0 percentage points.

Both family and social background and knowledge of the German language play an important role in school and professional development. There continues to be a large discrepancy between the educational success of Germans and that of foreign young people (see indicator 19). Furthermore, the declining willingness of employers to provide vocational training and the resulting limited number of apprenticeships have had a negative influence on this indicator. Marked by the upturn of the labour market, according to the results of the 2008 *Berufsbildungsbericht* ('Vocational Education Report') the number of new apprenticeship contracts concluded increased to 625,900 and thus by 8.6% in comparison to the same period in the previous year (cut-off date: 30th September). The increase was most pronounced in the *Old Länder* (10.7%), compared with only 0.9% in the *New Länder* and Berlin. Amongst other things due to the number of repeat applicants from previous years and the increase in applicants with university entrance qualifications, who pushed out school leavers with lesser qualifications (see indicator 9c), in 2007 there were still 29,100 applicants who failed to obtain an apprenticeship. In the case of unsuccessful applicants, besides job preferences which could not be fulfilled a lack of qualifications often played a significant role.

Education and training

Continuously improving education and vocational training



*) 25-year-olds: according to (ISCED 5A); 25- to 34-year-olds: according to (ISCED 5A/6), in each case excluding universities of applied administrative sciences.

Source: Federal Statistical Office

9b 25-year-old university graduates

Highly developed economies, such as that of Germany, in which the service sector and the need for knowledge and expertise sectors are becoming increasingly prominent in comparison to production industries, require a highly qualified workforce. For this reason, the period spent at a university and the average

age of graduates are central themes in discussion about higher education policy. As an indicator the Federal Government has chosen the share of all young people who have completed a university degree by the age of twenty-five. The goal is to increase this number to 10% by 2010 and 20% by 2020.

Between 1999 and 2007 this value went up from 5.5% in total to 7.6% and thus increased by 0.9 percentage points in comparison to the previous year. In a comparison between the sexes, in 2007 the proportion of 25-year-old women who had completed a university degree (9.4%, 0.9 percentage points more than 2006) was distinctly higher than that of men (5.8%, also 0.9 percentage points more than 2006) which partly has to do with military service or the equivalent civilian service. The trend of the indicator in the last five years has been positive. The pace of development is however insufficient for achieving the goal. The information value of the indicator is limited because it is based upon a very small age cohort of the population for statistical purposes.

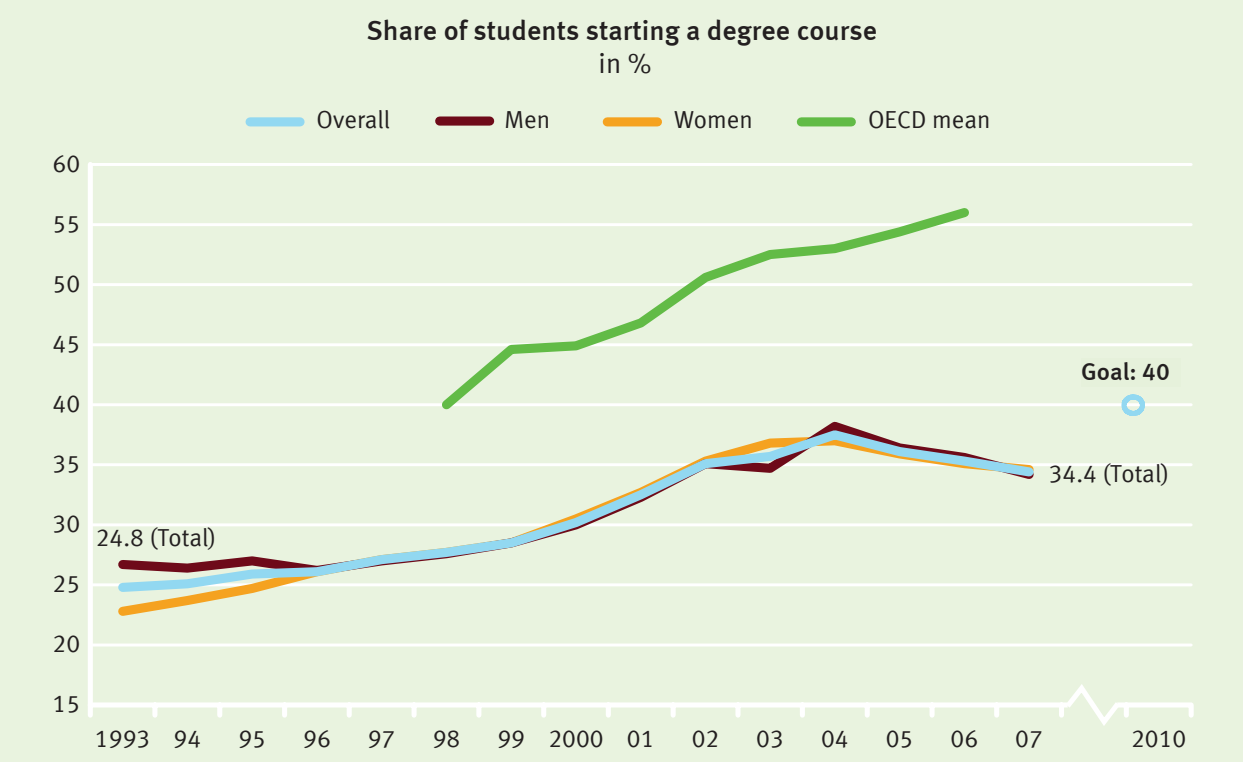
In 2006 the average age of graduates completing their first degree was twenty-eight and was virtually unchanged in comparison to 1999. This figure is connected with a child's age at the time of starting school, the period of time spent at school until Abitur (university entrance qualification), the duration of the transition from the school system to higher education and the length of time spent at university. Analysis of an extended age group of 25- to 34-year-olds shows that the proportion of young people who have completed a university degree increased from a total of 13.0% in 1999 to 16.1% in 2006. The average value for 25- to 34-year-olds in the OECD countries in 2006 was 25%. Among the graduates in Germany in this age group there were an increasing number of women. In the comparison between the sexes, young male graduates (15.6%) have been overtaken by women graduates (16.7%).

The total number of all university graduates in 2006 was 265,700; 28,600 more than in 1997. These included 40,900 engineering graduates (17% fewer than in 1997) and 43,100 mathematics graduates (19% more than in 1997). While in 2006, 34% of all degrees were completed in the fields of law, business and social sciences, 17% in language and cultural sciences and 16% in mathematics/natural sciences, engineers occupied fourth place with 15% of degrees. In recent years foreign students have made a substantial contribution to cushioning the decline in engineering graduates. The degrees completed by foreigners increased by 2,800 compared to 1997, while graduates with a German passport declined by 11,200. The proportion of women taking engineering degrees rose from 15% in 1997 to 22% in 2006, but remained well below the average of women across all subjects of 50%.

The European-wide revision of university programmes (in the so-called 'Bologna' process) has the goal of introducing bachelor's and master's courses in order to encourage international mobility of students and graduates and enhance the attractiveness of European universities for foreign students. In 2006, 37% of all first-year students in Germany chose a course leading to a bachelor's degree (23% the previous year) and 5% a course leading to a master's (previous year 4%). The traditional diploma and master's programmes, on the other hand, are declining in numbers (33%, compared with 41% the previous year). Moreover, the percentage of first-year students who aspire to a degree from a university of applied sciences declined from 19% in 2005 to 12% in 2006. The average age of students taking their first degree has fallen in only a few areas as a result of the Bologna process. In the 2006 examination year, graduates taking their first degree on diploma programmes at universities finished their studies on average at the age of 27.9, while in universities of applied sciences it was 27.8 years of age. First-degree graduates completed a bachelor's degree on average at 25.8 years of age and a master's degree at 28.0 years of age. Those taking master's degrees in computer sciences, physics or mechanical engineering were older than graduates in diploma subjects, while chemists were the same age.

Education and training

Continuously improving education and vocational training



Source: Federal Statistical Office (calculations in agreement with international OECD standards)

9c Share of students starting a degree course

An educational policy which enables as many young people as possible to acquire educational qualifications is a prerequisite for our society's ability to meet the challenges of the future. The rate of students starting a degree course measures the number of first-semester students (from Germany and abroad enrolled at institutions of higher education excluding universities of applied administrative sciences) expressed as a percentage of the population of the appropriate university-entrance age. The Federal Government's goal by 2010 is to increase the number of students starting a university course to 40%, and in subsequent years to develop and stabilise this at a high level. In terms of the necessary measures, the responsibility of the *Länder* for matters of education policy must be taken into consideration.

Between 1993 and 2004 the share of students in Germany starting a university course went up from 24.8% to over 37.5%, but fell back again to 34.4% by 2007. In 2007 the percentage of women, at 34.6%, was a little above that for men (34.2%). In the last five years up to 2007, the indicator developed in the wrong direction. If this trend continues, the goal will not be reached by 2010.

On average among the OECD countries the quota was clearly much higher. In 2006 56% of young people, thus more than half, started a university course, The proportions of students starting a university course were above average in respect of the age-specific population in Australia (84%), Iceland and Poland (78% each), Finland und Sweden (76% each) and New Zealand (72%), while Germany, Austria, Switzerland and Belgium occupied the lower end of the scale. In this comparison the differing structure of the educational systems in the OECD countries must be taken into consideration. The below-average value for Germany is influenced by the fact that here the system of vocational training mainly encompasses a dual system, whereas in other countries it takes place primarily at university level.

In 2007 358,200 new students (provisional results) registered at German institutions of higher education. Calculated according to national classifications, this number corresponds to a first-year student quota of 36.6%. With an increase of 13,300 in comparison to the previous year, the number of new students in 2007 is still considerably below the peak value of 2003 (with 377,500 new students). The percentage of women among these

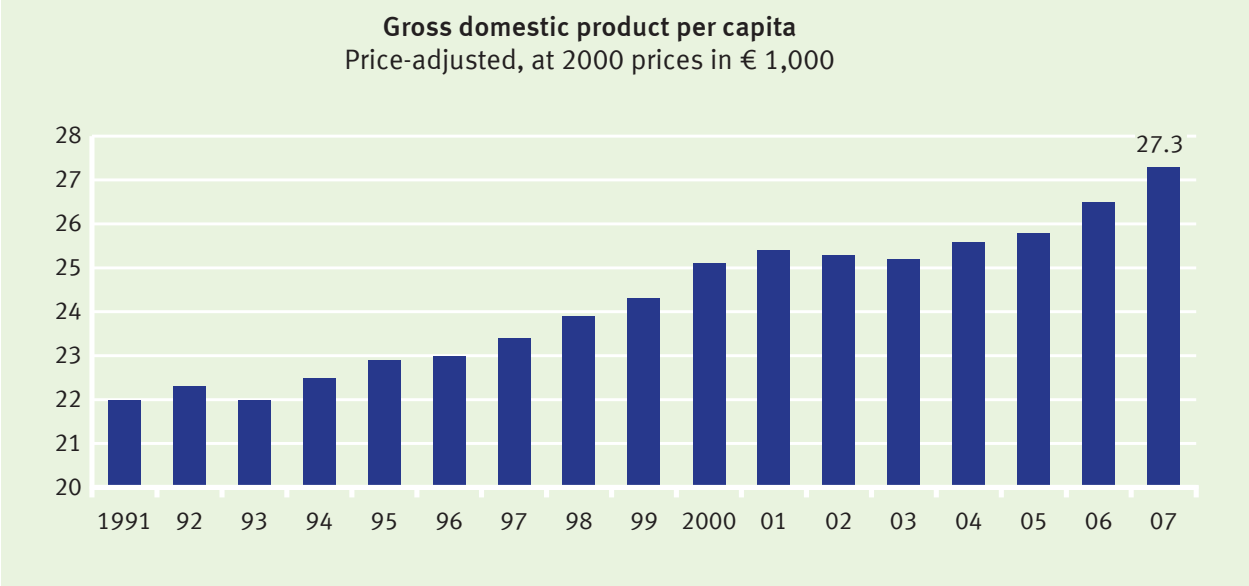
new students in 2007 was 49.8%. Because of the reduction in school time from thirteen to twelve years and a series of baby-boom years who are completing their schooling, a clear increase in student numbers is expected by 2010.

While the first-year student quotas declined between 2004 and 2007, the number of those who acquired qualifications granting them eligibility to go to university (*Abitur* or *Fachhochschulreife*) rose in 2007 by 4.2% in comparison to the previous year, to 432,500 (preliminary results, including school leavers after eight years at *Gymnasium* [grammar school equivalent]). 46.7% of those achieving this level were young men, and the majority of them (51.7%) acquired the Fachhochschulreife. Young people who were eligible to go to university increasingly chose vocational training instead of attending a university. The number of those starting an apprenticeship who were eligible to go to university increased between 2003 and 2006 by 18% to 130,000. Reasons for the increasing preference for vocational training among those qualified for university include the desire for more practice-orientated training, which is not covered by university courses, or restrictions on entrance to study certain subjects.

First-year students who acquired their university entrance qualifications in Germany were on average 21 years old in 2007. 16% of all students matriculating for the first time came to Germany from abroad to study. Since most of these had already studied in their home country, on average they were two years older than students who grew up in Germany. As a result the average derived age for starting university studies was 21.2 years of age. On a European comparison, first-year students for example in Greece, Spain, Belgium and Ireland (around 19 years old for each) were the youngest, and first-year students in Iceland (23.2), Denmark (22.6) or Sweden (22.4) the oldest. But there were already clear differences in age within Germany: the ages ranged from 20.8 years in Saxony and Thuringia to 22.4 years in Hamburg.

Economic prosperity

Raising economic output by environmentally and socially compatible means



Source: Federal Statistical Office, National Accounting

10 Gross domestic product per capita

Gross domestic product (GDP) expresses the total domestically generated economic output. It is considered an important indicator of the economic cycles and growth of a national economy, but was not conceived as a general measure of economic welfare. A variety of aspects link the development of the GDP with other areas within the National Sustainability Strategy. Thus social factors such as the population structure, the labour supply, the educational system, the child care system and social cohesion play an important role in society with regard to international economic competitiveness. Increasing economic output is, of course, desirable from a welfare perspective. Sufficient economic growth can enable structural change, safeguard jobs and create

new ones, and stabilise social systems against the background of the 'aging society' and the generational equity which is desired. On the other hand, insofar as it is associated with increasing consumption of natural resources, a growing GDP tends to have an adverse effect on the environment. The challenge posed to the Sustainability Strategy is to balance these conflicting goals by adopting appropriate measures.

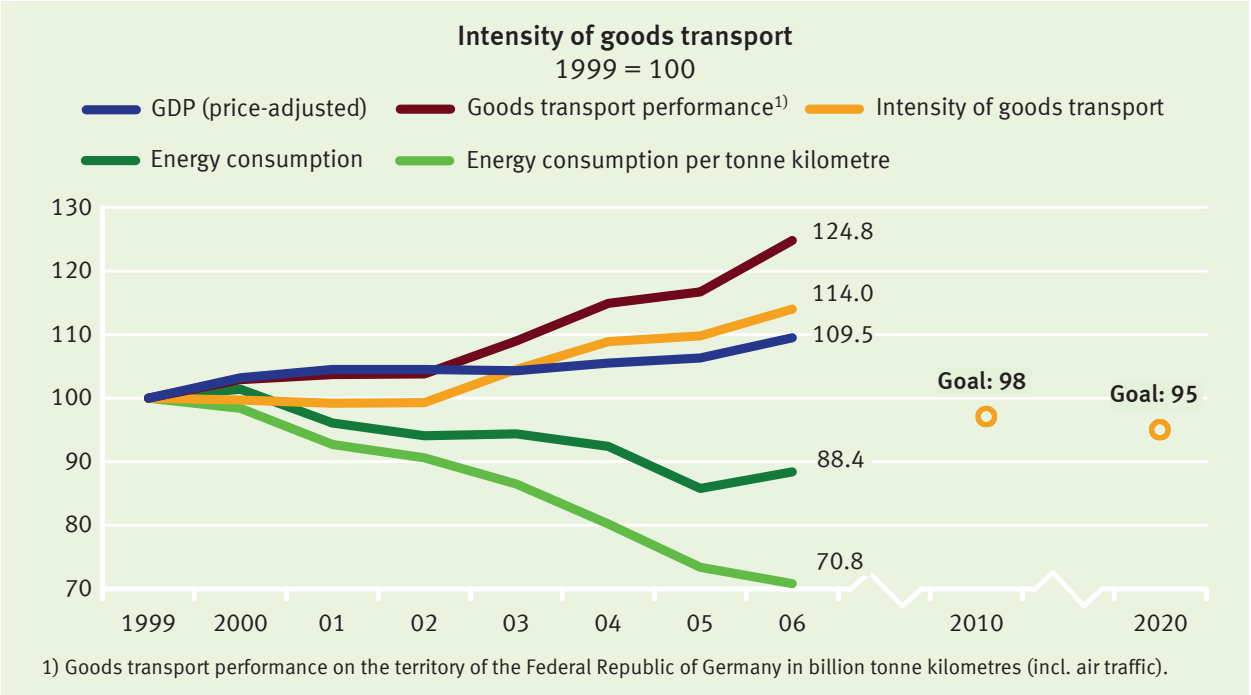
Between 1991 and 2007 real GDP per capita increased by a total of 23.8%. Following the recession of 1993, the ensuing economic revival lasted until 2001, showing average annual growth rates of almost 2%. Between 2001 and 2005 growth declined considerably, but in 2006 and 2007 rates rebounded to 3.1% and 2.5% respectively in comparison to the previous year.

Economic growth has varied considerably by sector. Between 1991 and 2007 the manufacturing industry (excluding construction) experienced real growth of about 23%, while the service sectors taken together showed a much stronger increase of 40%. While in 1991 industry still accounted for a 30.6% share of total gross value added (at current prices), by 2003 this figure had declined to less than 25%. From 2004 this share increased to 26.4%, however, because of the relatively high growth in this area between 2005 and 2007. Well above average growth in the services sector was achieved between 1991 and 2007 in the health and social services sector (+86%), transport and communication (+71%), and real estate, rentals and business services (+64%). The economic transition—marked by the increasing importance of the services sector and the decreasing significance of the production, mining, and building industries—contributed to a decoupling of economic growth and environmental pollution. This structural change, especially in CO_2 emissions and the use of raw materials, energy and settlement land, either completely or largely compensated for the negative effects of general economic growth. In particular, the more efficient use of energy in individual sectors also contributed to additional relief of the burden on the environment (see also indicators 1a, 1b, 2 and 4).

Economic output varied considerably from region to region. Starting from a comparably low level, economic output per capita was almost doubled by the *New Länder* (excluding Berlin) between 1991 and 2006 (+93%). The GDP of the *New Länder* increased by almost 76%, despite a 9.1% fall in population. In the former West Germany (excluding Berlin), on the other hand, economic output per head over the total period increased by only 13.8%, with a 20.7% increase in GDP and 6.1% population increase. Nevertheless, the *New Länder* still continue to lag behind the *Old Länder* by around 30% in terms of GDP per capita. Employment in Germany went up in total by about 1.1 million between 1991 and 2007 (see also indicator 16). Despite this increase in employment, large parts of the population are still threatened by poverty. The EU survey SILC (Statistics on Income and Living Conditions) 2006 established that in 2005 13% of the total population in Germany was threatened by poverty; in the *New Länder* this figure was 15%. Thus on a European comparison Germany lies clearly below the EU average of 16%.

Mobility

Guaranteeing mobility—protecting the environment



1) Goods transport performance on the territory of the Federal Republic of Germany in billion tonne kilometres (incl. air traffic).

Source: The Federal Minister of Transport (editor), *Verkehr in Zahlen* ('Transport in Figures'), 2007/2008

11a Intensity of goods transport

The Federal Government monitors the sustainability of goods transport development by means of the indicator 'Intensity of goods transport'. The intensity is measured as the ratio between domestic goods transport performance on roads, railways, inland waterways, pipelines and air, in tonne kilometres, and the price-adjusted GDP. The goal of the Federal Government is to reduce the intensity by 2% by the year 2010 compared to the base value of 1999, and by an additional 3 percentage points by the year 2020.

Between 1999 and 2006 the intensity of goods transport increased by 14.0% showing a development contrary to the trend desired. The clear increase in intensity is the result of a relatively strong increase in goods transport performance (tonne kilometres) by 24.8% combined with an increase in the economic performance of 9.5% (price-adjusted).

The increase in goods transport performance in this period was, however, achieved with a decreasing use of energy. This decline can be ascribed to technical advances. The average energy consumption declined by 29.2% between 1999 and 2006 to 1.36 megajoules per tonne kilometre (MJ/tkm). This development was primarily caused by the decrease in the specific energy consumption by lorries declining from 2.52 MJ/tkm to 1.75 MJ/tkm (-30.6%). However, the enormous increase in goods transport performance since 2005 has more than overtaken the technical improvements and has thus led to an increase in total energy consumption.

The intensification of the technical division of labour has become a burden on transport intensity. This division of labour has an impact on the vertical integration of companies. Declining vertical integration is, as a rule, accompanied by increasing transport volume of deliveries. The degree of the technical division of labour can be approximated by means of the ratio of the total volume of goods (domestically produced, as well as imported goods and services) to the GDP. An increase in this ratio shows that companies increasingly buy semi-finished products from other companies in Germany or abroad. This factor accounted for a calculated increase of 9.4 percentage points in transport intensity. In addition, the distances between the places of production and the places of use of the goods increased on average. This increasing geographical separation of production and consumption activities led to a further increase of 10.8 percentage points.

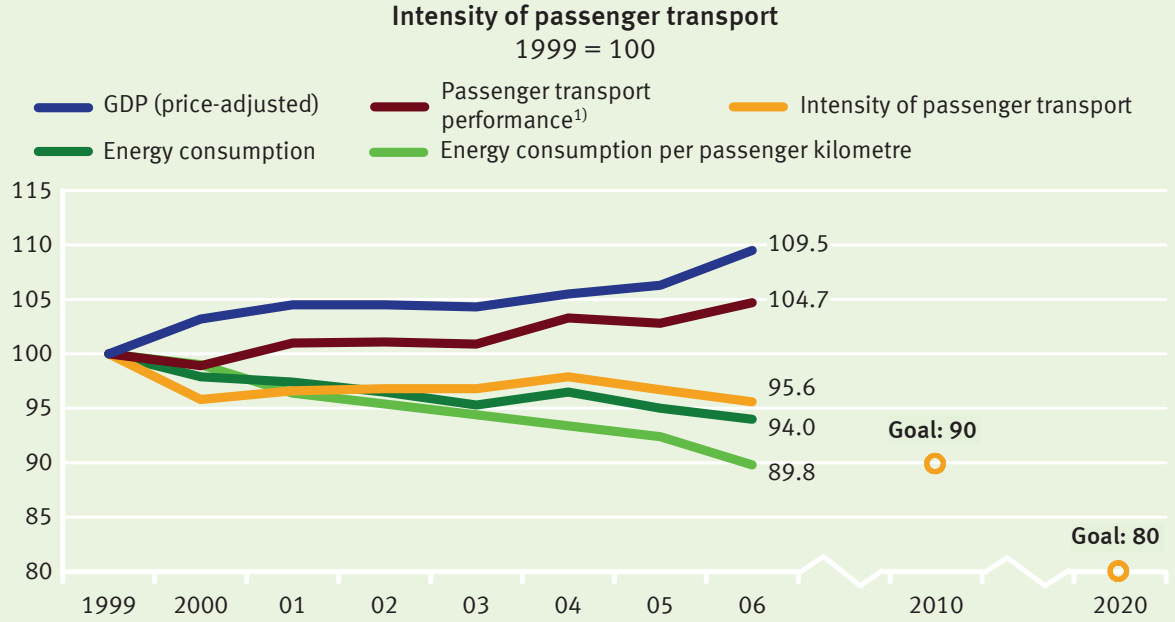
On the other hand, the change in the composition of the goods volume due to the change in demand to less material-intensive goods (for example, an increasing share of services) relieved freight intensity by 6.2 percentage points.

The indicator on goods transport performance refers only to transport within Germany. For this reason it reflects to only an insufficient degree the influences of the growing integration into foreign trade of the German economy (globalisation). Goods transport performance amounted to 620 billion tonne kilometres in the year 2006; in comparison, the goods transport performance of sea transport through German harbours alone amounted to 1,750 billion tonne kilometres, almost three times as much as the total of domestic transport. Furthermore, between 1999 and 2006, as a consequence of globalisation, goods transport performance of shipping, with a rise of 58%, has greatly outdistanced domestic transport performance.

The indicator has a variety of cross references to other indicators (for example, to 1a, 2, 3, 4, 13 and 16 with regard to the shipping and transport services industry and the automobile industry).

Mobility

Guaranteeing mobility—protecting the environment



1) Passenger transport performance on the territory of the Federal Republic of Germany in billion passenger kilometres (incl. air traffic).

Source: The Federal Minister of Transport (editor), *Verkehr in Zahlen* ('Transport in Figures'), 2007/2008

11b Intensity of passenger transport

The availability of adequate, flexible and inexpensive passenger transport is important both with regard to social welfare (especially personal mobility) and for the functioning and the international competitiveness of a modern economy based on the principle of division of labour. Passenger transport activities can, however, also lead to substantial environmental burdens, especially through the use of fossil energy sources, land use, noise pollution and emissions of air pollutants. For this reason the Federal Government is pursuing the goal of decoupling economic growth from an increase in passenger transport performance and the environmental burden caused by transport.

The government monitors the sustainability of passenger transport development by means of the indicator 'Intensity of passenger transport'. The intensity is measured as the ratio between passenger transport performance in passenger kilometres and the price-adjusted GDP. The Federal Government's goal is to reduce the intensity by 10% by 2010, and by an additional 10 percentage points by 2020, compared to the base value of 1999.

Since passenger transport performance in the period in question has increased only slightly (by 4.7%) and the GDP has increased more significantly (by 9.5%), intensity has dropped by 4.4%. The indicator has thus been moving in the right direction towards achieving the goals set. The relatively favourable development of the indicator has probably been caused mainly by the distinct rise in fuel prices (petrol +51%, diesel +75%).

The increase in passenger transport performance between 1999 and 2006 was accompanied by a decline in energy consumption. The average consumption of energy decreased in the period under review by nearly 10%, to 1.77 megajoules per passenger kilometre (MJ/Pkm). The development of specific energy consumption in individual motorised transport was chiefly responsible for this change.

The transport performance of individual motorised traffic, which in 2006 had a share of 80.3% in overall passenger transport performance, has increased only moderately since 1999 (by 2.5%). On the other hand, the passenger transport performance of railway and public road transport (which until 2003 was comprised only of enterprises with at least six omnibuses) increased overall by 7.8%. The performance of domestic air transport increased by 11.2%.

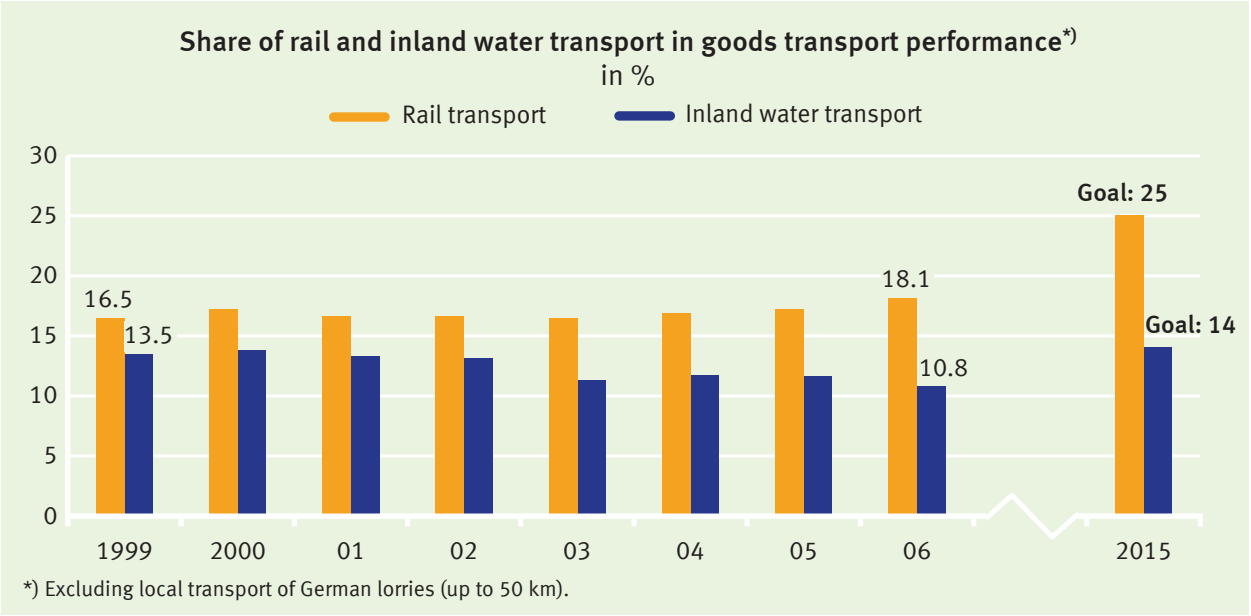
Individual motorised transport serves various purposes. In the year 2005 recreational traffic accounted for the biggest share in transport performance, with 35.6%. The share of commuter traffic amounted to 17.6%, followed by shopping traffic at 17.2% and business trips at 12.9%.

Chiefly because of technological improvements and the growing share of diesel vehicles, the consumption of fuel per kilometre in individual motorised traffic went down by 8.2%.

The indicator has cross references to, among others, the indicators 1a, 2, 3, 4, 12a, 13, 14a, b (with reference to traffic accidents) and where applicable 16 (with reference to the transport service industry and the automobile industry).

Mobility

Guaranteeing mobility—protecting the environment



Source: The Federal Minister of Transport (editor), *Verkehr in Zahlen* ('Transport in Figures'), 2007/2008

11c, d Share of rail transport and inland water transport

Goods transport by rail or inland waterways has a distinctly lower environmental impact per tonne kilometre than has transport by road or air. For this reason the Federal Government aims to significantly increase the share of domestic rail and inland water transport; the goal is to increase the share of rail transport by 2015 to 25%, and of inland shipping to 14%.

Total domestic goods transport went up by 27.4% to 592.7 billion tonne kilometres between 1999 and 2006. The market share of rail transport improved slightly, from 16.5% to 18.1%, but did not significantly increase. The share of inland waterway transport actually declined from 13.5% to 10.8%. Looking at the absolute figures between 1999 and 2006, the freight transport performance of rail increased from 76.8 billion to 107.0 billion tonne kilometres, and that of inland water from 62.7 billion to 64.0 billion tonne kilometres. Despite the positive trend in rail transport, it is not to be expected that, given the average rate of change in the last few years, the goal set by the Federal Government for this sector will be achieved in time. For inland water transport it is, in fact, evident from the development of the indicator that the Federal Government's goal cannot be achieved.

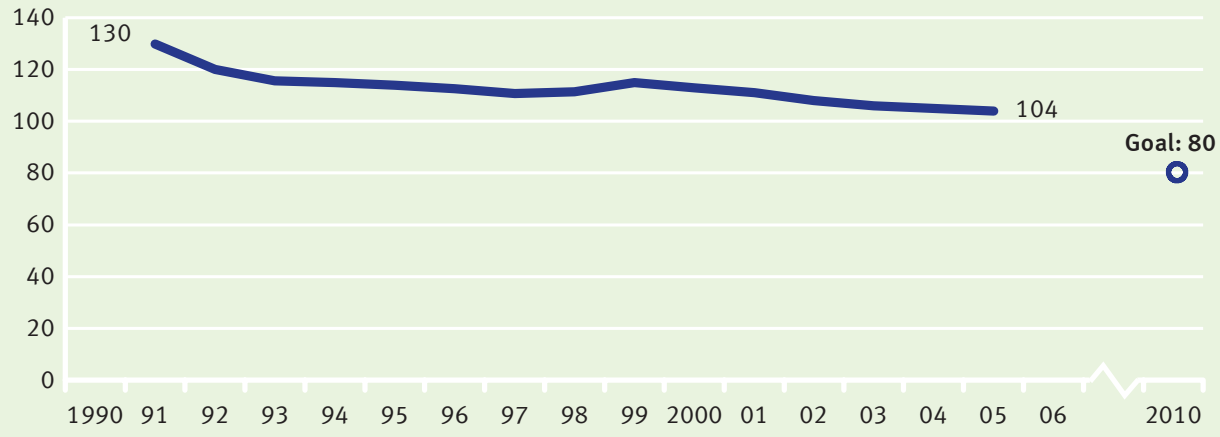
Compared to domestic road transport performance (excluding foreign lorries) rail transport was able to increase its market share for most types of goods. This applied to the goods largely transported by rail, such as coal, ore and iron, as well as to the majority of other types of goods. A particularly clear increase in rail transport was recorded for crude oil (12% to 23%), stone (8% to 12%) and ore (37% to 47%) in the period 1999–2006. The share of foreign lorries in freight transport performance grew in the period under review from 19% to 23%, i.e. the increase in market share of the railways mentioned above could well be correspondingly smaller when looking at the overall transport performance figures on the road transport performance of foreign carriers broken down by types of goods are not available.

In contrast to rail, inland shipping suffered losses in market shares in the period 1999–2006, especially relating to the transport of types of goods where it had traditionally had a large share. For example, the market share relating to chemical products (including fertilisers) decreased from 19% to 16%, crude oil from 27% to 23% and ore from 41% to 35%.

Goods transport performance in inland water transport went up by 1.3 billion tonne kilometres between 1999 and 2006. When breaking down the figures behind this trend into the influencing factors 'Goods transport performance by domestic carriers', 'Structure of goods transport performance by types of goods' and 'Market share of inland water transport for individual goods' leads to the following result: the increase in overall goods transport performance generated an increase in the transport volume of inland shipping by a calculated 11.2 billion tonne kilometres. This is counterbalanced by the negative effects caused by the change in the composition of transported goods of -3.9 billion tonne kilometres and the market share losses experienced in individual types of goods of -6.0 billion tonne kilometres.

Farming

Environmentally sound production in our cultivated landscapes



*) Trend (moving three-year average, based on the second year; figures 1990 until 2006 incl.).

Source: Julius Kühn Institut Braunschweig and Federal Environment Agency/University of Giessen

12a Nitrogen surplus

Nitrogen compounds are important plant nutrients. In farming, nitrogen is used on the land as fertiliser in order both to replace the nutrients in the soil used up in production, and to maintain yield levels, the quality of harvests and soil fertility. In addition, other sources (for example, livestock farming, traffic, private households) contribute to adding nitrogen to the soil via the air. An excess nitrogen input into the environment leads to far-reaching problems: pollution of ground water, eutrophication of inland bodies of water, oceans and ecological systems on land, and the formation of greenhouse gases and acidifying air pollutants, with all their consequences for the climate, biodiversity and the quality of the landscape (see indicators 2, 5 and 13).

The nitrogen indicator for the agricultural sector in Germany can be calculated by means of the comparison of nitrogen input (mostly via fertilisers, animal feed and seeds) to nitrogen output (through crop and animal market products). The aggregate amounts of nitrogen used that did not leave the agricultural sector in the form of agricultural products are included in the total balance for Germany for the year (kg N/hectare and year) calculated using the farm-gate model. The surpluses so determined are used as a measurement for the environmental load in this area; since the balance, for example, also contains the amount of nitrogen required for the maintenance of soil fertility, it should not be equated across the board with environmental loss.

In contrast to the previous representation (in the 2006 Indicator Report) a time series will be used here that is based on the calendar year and shows the moving three-year average (based on the second year in each case). Calculating this mean value balances out the yearly variations that cannot be influenced, caused by the weather. The Federal Government's goal is to reduce the surpluses to 80 kg of nitrogen per hectare and year by 2010.

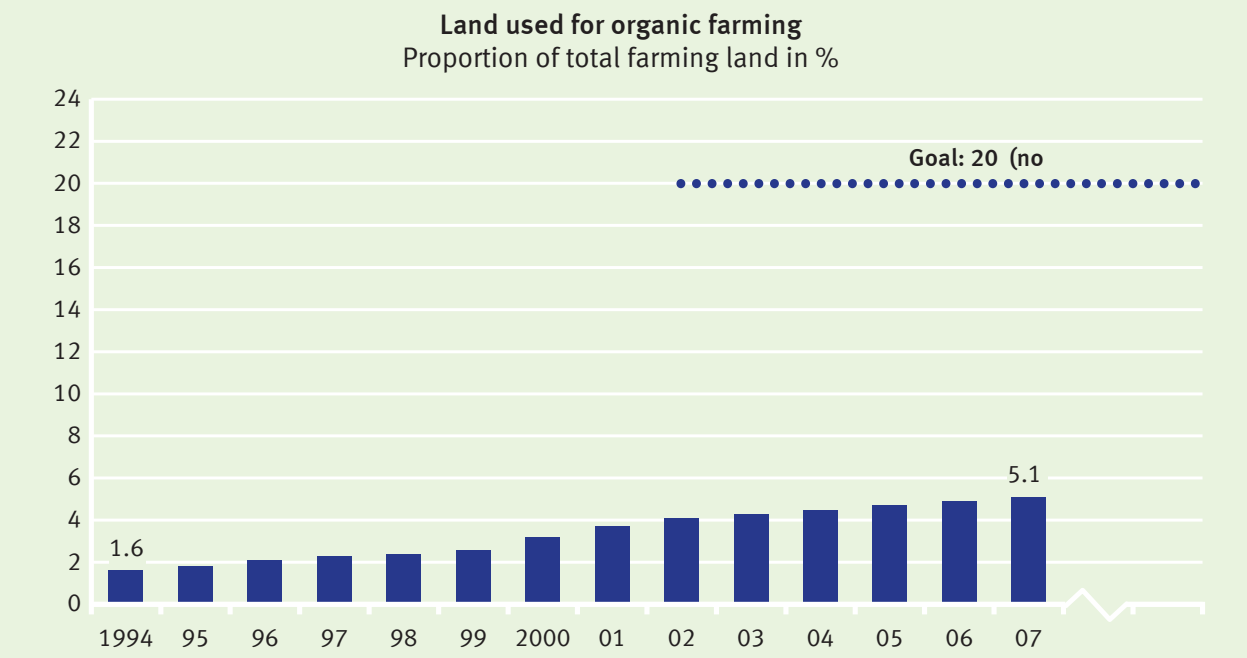
Since 1991 the averaged balance of 130 kg/ha per year has declined to 104 kg/ha per year in 2005. This corresponds to a reduction of the annual surplus by 20% since 1991. Altogether, between 1991 and 2005 little more than half the reduction desired to be achieved by 2010 was actually reached. The reduction at the beginning of this time series can be seen in connection with the decreasing number of livestock in the *New Länder*. During the last five years the average annual reduction of the balance was less than 2%. But in order to achieve the goal, that reduction would need to increase by an average 5% a year between 2006 and 2010.

While the nitrogen input in the sector has changed very little over the last ten years, nitrogen output (for example, through higher nitrogen removal through market produce) has increased. This increase can be ascribed to yield increases in crop production and a higher feed conversion ratio in livestock, and hence also to an increased nitrogen efficiency. Analyses of operational farming data show that high surpluses are generated especially in farms with high numbers of livestock. It also shows that on farms with a comparable production structure that raise animals a large spectrum of nitrogen surpluses occurs. This permits the conclusion to be drawn that additional reduction potential exists in order to improve nitrogen efficiency.

This indicator is related to the indicators 1a und 1b, 2, 5, 11, 12b, 13 and 21.

Farming

Environmentally sound production in our cultivated landscapes



Source: Federal Ministry of Food, Agriculture and Consumer Protection based on figures under Council Regulation (EEC) No 2092/91

12b Organic farming

Organic farming is specifically geared towards sustainability. This kind of farming preserves and protects natural resources to a particularly high degree. It has a range of positive effects upon nature and the environment, and provides for the production of high quality foodstuffs. Moreover, it also makes a contribution to the maintenance and preservation of the cultivated landscape and employment in rural areas. Among the rules for organic farming is the renouncement of the use of highly soluble mineral fertilisers, chemical synthetic pesticides and genetically modified organisms. From an economic point of view, the fact that organic farming yields a smaller amount of produce per land unit is partially balanced out by the higher price of eco products.

The indicator shows the share of land cultivated by organically producing farms that is subject to the inspection system of the EU Regulation on Organic Farming (Council Regulation (EEC) No 2092/91) as part of the total area under agricultural cultivation in Germany. It includes both the areas completely devoted to organic farming as well as those still under conversion. The decision to switch to organic farming is one made by individual farms. The Federal Government intends to create conditions that will allow organic farming to achieve a share of 20% of the area in the coming years.

From 1994 to 2007 the share of organic farming in the arable land increased from 1.6% to 5.1% (865,336 hectares). In 2007 the newly converted area of 39,797 hectares was more than double that of the previous year.

According to Eurostat figures, 6.65 million hectares of arable land were used for organic farming in the year 2006 in the EU-27 countries. Italy accounted for the largest share (1.1 million hectares or 17%), followed by Spain (0.9 million hectares or 14%) and Germany (0.8 million hectares or 12%).

Organic farming focuses on certain kinds of production: the share of land for grain cultivation is smaller than in conventional farming, whereas the area for forage crops and pulses is larger. According to the data provided by official statistics, in Germany in 2007 in organic farming the share of land used for permanent pasture was 50.9%, whereas 47.8% of the land was used for arable farming. Of the total farmland, however, arable land dominated with 70.1%, while permanent pasture accounted for only 28.8% (plus 1.2% for permanent crops). In keeping with the high share of permanent pasture, organic farms with livestock in 2007 ran mainly beef cattle (75.3%), but also sheep (18.6%). Organic pig farming was of minor importance.

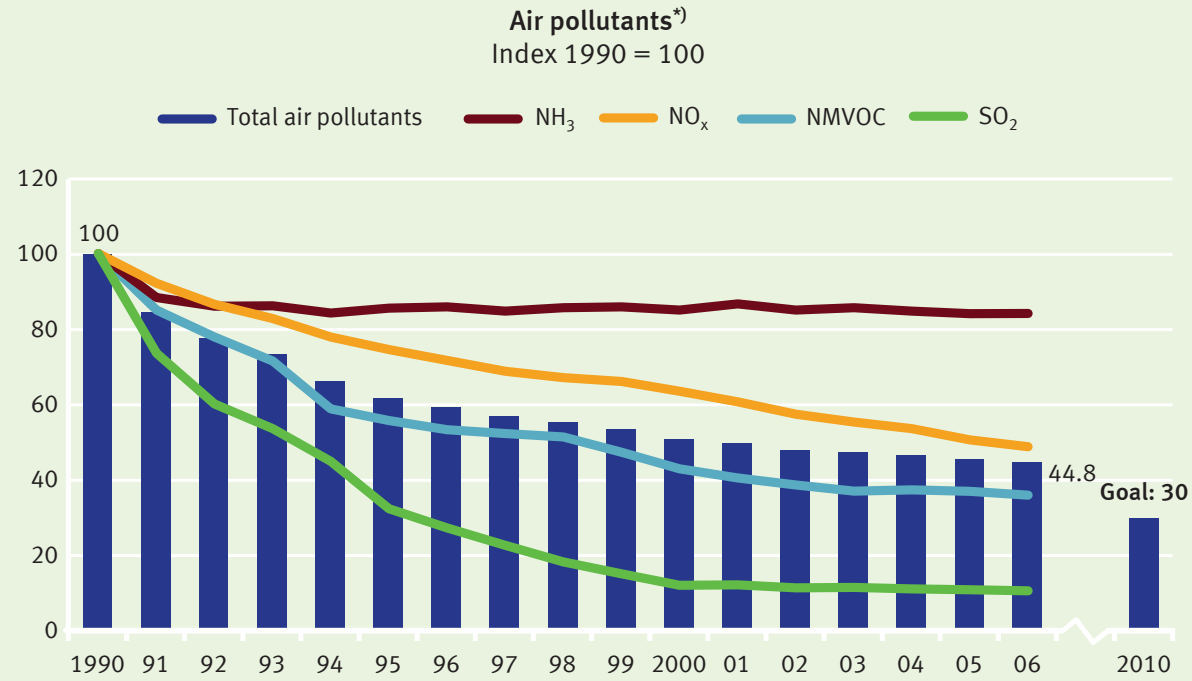
The average size of organic farms in 2007 was 59.5 hectares, larger than that of the average of farms overall (45.3 ha), and they were particular large in the *New Länder* (179.2 ha).

Eco food sales have grown much faster since 2000 than domestic production, and amounted to 4.6 billion euros in 2006 *(ZMP—Zentrale Markt- und Preisberichtsstelle GmbH)*. The increased demand is also to be attributed to the fact that food retailers increasingly offer eco products. The demand had to be met increasingly by imports from other EU member states or non-EU countries. The production of renewable energy from biomass (supported by sales and price guarantees), as well as an increasing demand for foodstuffs, led to competition for arable land. This in turn has led to increased prices for agricultural products. In this competitive situation, any further conversion to organic farming, desirable from an ecological and supply point of view, has—cost-intensive as it is—stagnated.

Cross references of the indicator to indicator 2 (organic farming causes fewer CO_2 emission, among other reasons because of the saving of energy that would have been necessary for the production of fertiliser and pesticides), 3, 4 and 5 (promotion of species diversity through the more extensive farming).

Air Quality

Keeping the environment healthy



*) Sulphur dioxide (SO_2), nitrogen oxide (NO_x), ammonia (NH_3) and non-methane volatile organic compounds (NMVOC), averaged index of measurement data.

Source: Federal Environment Agency

13 Air pollution

The protection of human health was the starting point of the environmental protection movement. A correlation between respiratory diseases and air pollutants was established early on, so at first protective measures were directed at reducing the emission of air pollutants. But air pollutants also damage ecosystems and species diversity, especially through acidification and eutrophication of the soil. Although the integration of desulphurisation and denitrogenisation units in power plants and the wide application of catalytic converter technology in petrol engines have served to reduce emissions in Germany significantly since the 1980s, further efforts are still needed. The National Strategy for Sustainable Development's indicator 'Air pollution' combines four essential pollutants: sulphur dioxide (SO_2), nitrogen oxides (NOx), ammonia (NH3) and the non-methane volatile organic compounds (NMVOC).

The goal of the Federal Government 2002 Strategy is to reduce the emission of these pollutants by 70% (using 1990 as the base year) by 2010. An updated goal will be worked out in agreement with the EU and is expected to be fixed in 2009.

Air pollution decreased by 55% until 2006; the process has developed in the right direction overall. In order to reach the goal, in the four-year period leading up to 2010, an additional reduction of emissions amounting to 15 percentage points must be achieved. Clear-cut reductions were achieved in the first half of the 1990s, and by the year 2000 the emissions of air pollutants had almost been cut in half (-49%). But in the following years, up to 2006, a reduction of only 6 percentage points was achieved, and compared to the previous year the decrease was merely 0.7 percentage points The speed by which emissions have been reduced over the last few years is insufficient to reach the goal of a total reduction of the index to 30%.

The contributions to the development between 1990 and 2006 by individual types of emission varied. The strongest was the 89.6% reduction of the sulphur oxide emissions; reduction by 70% has already long been achieved and even clearly exceeded. But since the turn of the millennium the additional reduction has been merely marginal. Part of this reduction was accomplished by the desulphurisation of the exhaust gases of power plants by the partial replacement of high-sulphur domestic brown coal with low-sulphur fuels, as well as according with legal limits for sulphur contents in liquid fuels.

Emissions of non-methane volatile organic compounds (NMVOC) were successfully reduced by 64.2% in the period under review. This means that a reduction of 70% has been nearly achieved. The increasing use of catalyser technology in automobiles has proved decisive in the significant reduction of NMVOC emissions in the transport sector.

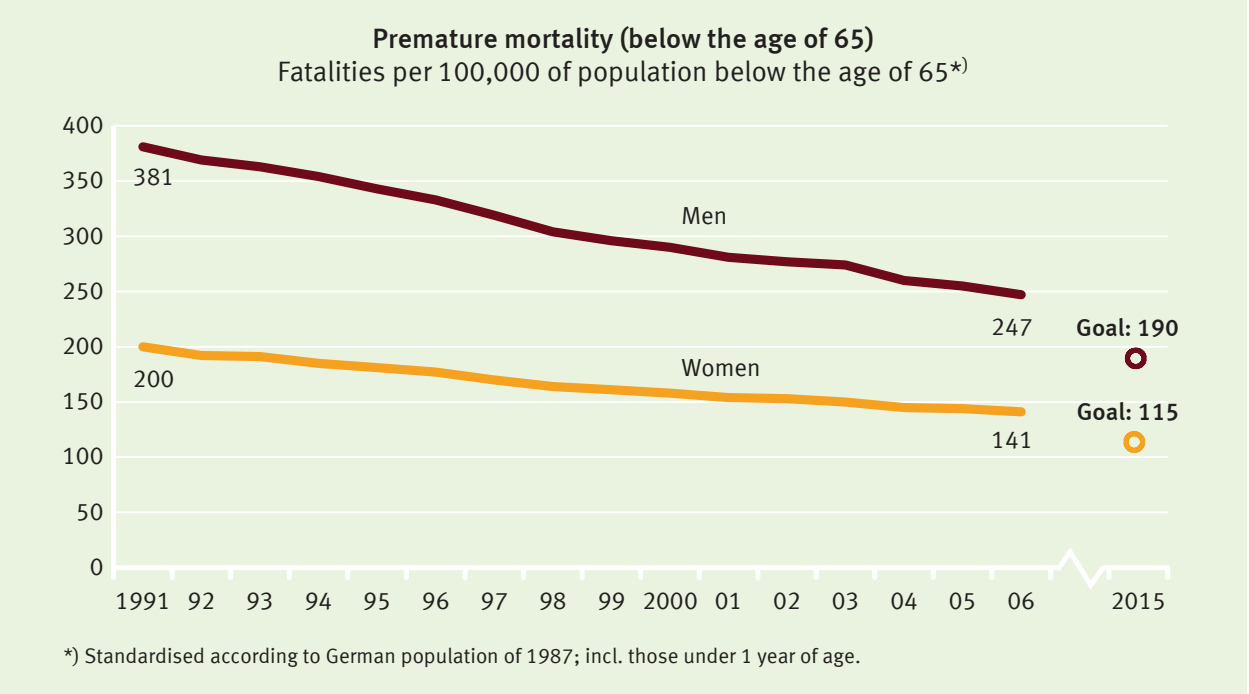
Since 1990 nitrogen oxide emissions have fallen by 51.3%. The employment of catalytic converter technology in combustible engines in road traffic mentioned above has also played an important role here. Moreover, the increased use of exhaust gas denitrogenisation installations in power plants has resulted in a pronounced decrease.

Ammonia emissions, which derive almost exclusively from farming, have been reduced by a mere 15.9% since 1990. The initial decrease was mainly due to the reduction of livestock in Eastern Germany following German reunification. Since then this sub-indicator has showed little development.

The indicator has direct and indirect cross-references to other indicators, for example 1, 3b, 4, 5, 11, 12a and 12b.

Health and nutrition

Living more healthily for longer



Source: Federal Statistical Office

14a, b Premature mortality

Health and life expectancy are determined by a number of factors, including social status, educational level, personal lifestyle and habits (consumption of tobacco, alcohol, physical exercise, nutrition), working conditions, environmental factors and medical care and disease prevention measures. When a high number of fatalities in a population occur at an age distinctly below the average life expectancy, this is an indication of increased health risks that could well be avoided. The National Strategy for Sustainable Development has as its goal that by 2015 premature mortality (death before 65) should be maximum 190 men and 115 women per 100,000 inhabitants.

The indicator presented here shows the deaths of under 65-year-olds in Germany. The values refer to 100,000 inhabitants of the population in 1987 under 65 years of age. The method of computing the figures provides for a time series that is comparable over time. It takes the fact into account that due to the demographic development in Germany there is an ever-increasing number of people above the age of 65.

Between 1991 and 2006 premature mortality steadily decreased, for men by 35% and for women by 30%. Thus the gender-specific difference in premature mortality diminished. In absolute figures in 2006, 247 men and 141 women per 100,000 inhabitants died prematurely, i.e. before they reached the age of 65. If the present trend continues, the goal values for men could almost be achieved, whereas for women the figures would fall short by a narrow margin.

Life expectancy in Germany has once again increased. Between 2004 and 2006 the average life expectancy for newborn girls was 82.1 years of age and for boys 76.6. Between 2003 and 2005 the average was still 81.8 and 76.2 years of age respectively. Today 60-year-old women can, statistically, expect an additional 24.5 years of life, and men an additional 20.6. In the *Old Länder* life expectancy is still somewhat higher than in the *New Länder*; the difference is 1.4 years for newborn boys and 0.3 years for newborn girls.

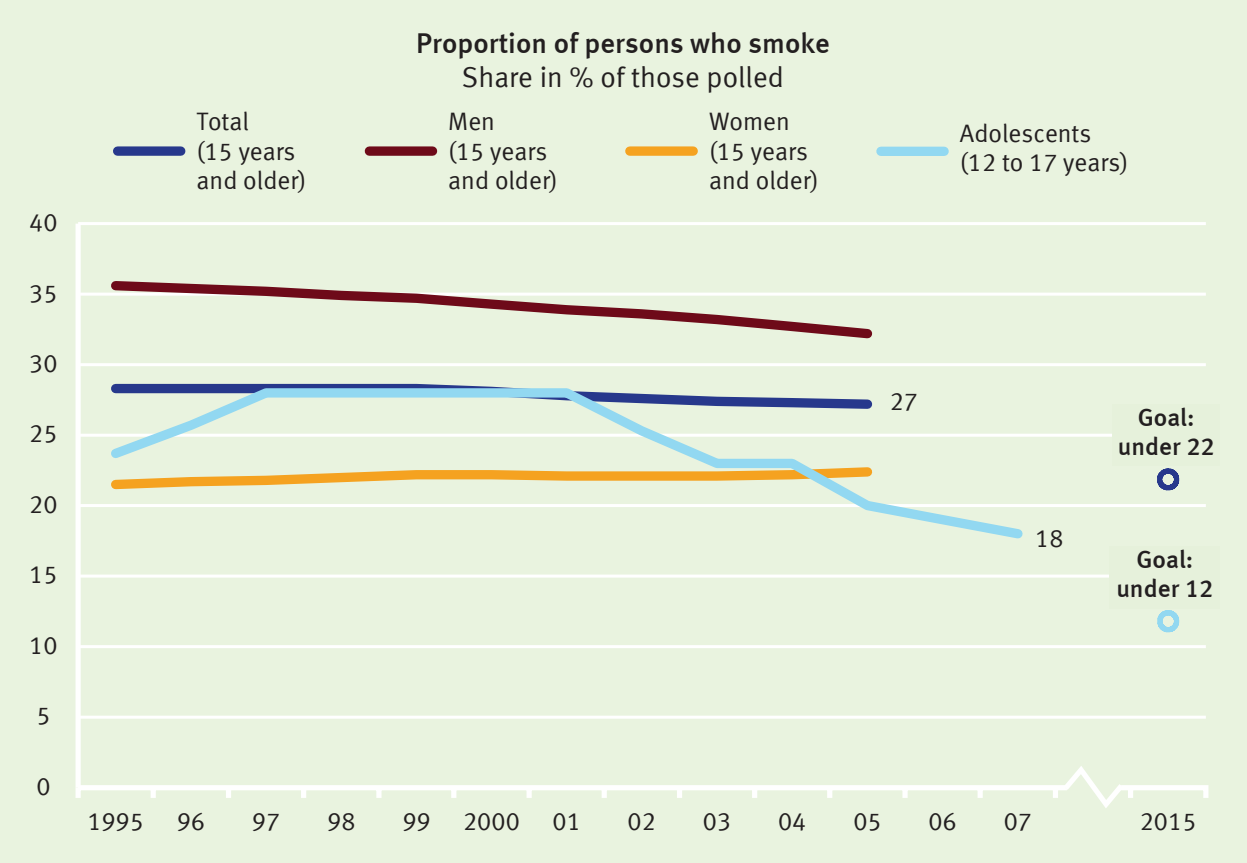
In 2006 cardiovascular diseases were in general the most common cause of death (43.7%), followed by malignant tumours (25.7%), and diseases of the respiratory system (6.7%) and the digestive tract (5.2%), as well as deaths due to external causes (3.9%). The importance of the individual causes of death varied according to age and gender; whereas cardiovascular diseases were the principal cause of death in the greatest number of

people above the age of 65, malignant tumours (cancers) were the principal cause in 40- to 64-year-olds. The principal causes of death in 1- to 39-year-olds were non-natural (injuries and poisoning). Despite progress in combating fatal accidents, death by accident is still the main cause of death among 18- to 25-year-olds.

Besides factors such as health behaviour, medical care also plays an important role in the mortality rate. Total expenditure on healthcare amounted to 245 billion euros in 2006, representing an increase of 5.7 billion euros or 2.4% compared to the previous year. This expenditure corresponded to 10.6% of the GDP or 2,970 euros per inhabitant (2005: 2,900 euros). In 2006 the services of physicians accounted for 27% of the total expenditure; the same amount was devoted to goods (i.e. medicines, dressing materials, aids and appliances, dentures and other medical supplies). In comparison to 2005, the expenditure on the services of physicians increased by 3.2%, and those on goods by 2%, with expenditure on pharmaceuticals (39.6 billion euros) and aids and appliances (10.9 billion euros) being the most important in this category. Above average was the increase of 4.4% spent on prevention (for example, early diagnosis) and occupational health and safety (9.3 billion euros).

Health and nutrition

Living more healthily for longer



Sources: Federal Statistical Office, Federal Centre for Health Education *(BZgA)*

14c, d Proportion of adolescents and adults who smoke

Long-term tobacco smoking involves a definite risk of considerable damage to health, and not just to smokers; non-smokers exposed to tobacco smoke do not just suffer annoyance but can fall ill from it. It can be observed that adolescents are guided by social role models in their smoking behaviour, in order to appear more grown up. The two partial indicators on smoking behaviour show the percentage of polled adolescents between 12 and 17 years of age and those 15 years old and older, who occasionally or regularly smoke. The Federal Government is pursuing the goal of reducing by 2015 the percentage of juvenile and adolescent smokers to under 12%, and that of smokers of 15 years of age and older to under 22%.

In the group of adolescents between 12 and 17 years of age, smokers increased from 24% (1995) to 28% (1997 and 2001). In the years following, the share decreased by 2007 to 18% (data from Federal Centre for Health Education *[BZgA]*). In 2005, 27% of 15-year-olds and older who were polled stated that they occasionally or regularly smoked (microcensus). In 1995 and 1999, 28% smoked. This means that the proportion of adults smoking declined only slightly. In order to reach the goal for persons 15 years of age and older, a more concerted effort on the part of all stakeholders must be made.

In 2005 23% of all those polled that were 15 years or older considered themselves regular smokers, while 4% smoked occasionally. Clearly more men (32%) than women (22%) smoked. While the proportion of men who smoke had decreased by 4% percentage points since 1995, the proportion of women smokers had gone up slightly. The amount of tobacco smoked is important relative to the individual threat to health. In 2005, 97% of the smokers surveyed preferred cigarettes; 16% of the regular cigarette smokers (1995: 17%) were in the category of heavy smokers, i.e. consumed more than 20 cigarettes a day, whereas 77% smoked 5–20 cigarettes per day. With regard to the number of cigarettes consumed per day, differences per gender were also apparent; one in five of the regular male smokers (20%) were heavy smokers, but only one in nine (11%) of the female smokers. Besides the amount smoked, the age at which smoking is started also has an influence on the health risk. In the last fifty years the entry age has become drastically younger. In 2005 those men aged 65–69 at the time of polling stated that they had begun smoking at the age of 18.9, whereas women of the same age had begun at 23.1 years of age. Male adolescents aged 15–19 stated that they started at the age of 15.3 years, and their female counterparts at the age of 15.0.

There is an inverse relationship between net household income and the proportion of smokers. In 2005, in households with a low monthly income, of up to 1,300 euros, 33% of those polled reported being smokers. In households with 2,600–4,500 euros per month 26% said they were smokers, and in households with over 4,500 euros per month, 20% of those polled said they smoked.

Smoking poses a high and at the same time avoidable risk to health. In 2006, 5.1% of all fatalities (42,348 people, of whom 30,249 were men and 12,099 women) could be traced to diseases typical of smokers (lung, laryngeal and tracheal cancer). In comparison to 2000, this is an increase of 4.5%, which is primarily due to an increase in the number of female deaths. Since 2000 their share has gone up by 3.9 percentage points from 24.7% to 28.6%. The average age of those who died from lung, laryngeal and tracheal cancers in 2006 was 69.5 years of age—seven years lower than the average death rate (76.5 years). Apart from individual suffering and personal tragedy, from an economic perspective diseases and premature deaths caused by the consumption of tobacco led to a high burden on the social security and health care systems. It may be assumed that these costs are considerably higher than the income derived from the tax on tobacco, which in 2007 amounted to 14.2 billion euros.

Health and nutrition

Living more healthily for longer

Source: Federal Statistical Office

14e Proportion of obese people

Surplus body weight plays a major role in the development of diseases of civilisation such as cardiovascular diseases, diabetes and joint injuries. Overweight is directly caused by an unbalanced diet and lack of exercise, and is indirectly related to social causes, such as educational background or social integration. Besides the consequences to health, overweight is also a burden on the national economy and has a negative impact on social life. Categorisation as 'overweight' is made on the basis of the body mass index (BMI), that is, an individual's body weight in kilograms divided by the square of his or her height in metres. People with a BMI of 25+ are classified according to the WHO as 'overweight' (with age and sex-specific differences not taken into consideration). When overweight goes beyond a definite point (a BMI of 30+), it is classified as 'obesity' and is as a rule connected to certain impairments to health.

It is the goal of the Federal Government that the number of obese people in Germany will be reduced by 2020.

In 2005, 13.6% of the population in Germany aged 18 years or older could be classified as obese (whereas in 1999 the percentage had been only 11.5%); at 14.4%, the percentage of obese men was higher than that of obese women (12.8%). In 2005, 49.6% of the adult population was deemed overweight; again, the share of men (57.9%) was higher than that of women (41.5%).

The proportion of obese people increases directly with age, although this trend suddenly clearly reverses in people of very advanced age. In 2005, 2.8% of 18- to 20-year-old women were obese. Then about 8% of the women between 30 and 35 years of age were already obese, and 15.8% of those between 50 and 55 years of age. The highest proportion of obese women was found in the age group between 70 and 75 years of age at 21.5%; after this age the figures fell sharply. In men, some 10% between 30 and 35 were obese, and the highest proportion of obese men was found in 55- to 60-year-olds (20.6%). In comparison to 1999, the shift in proportion of the obese in advanced age is conspicuous: in 1999 about 16% of the women between 70 and 75 were obese, but in 2005 the figure was 21.5%.

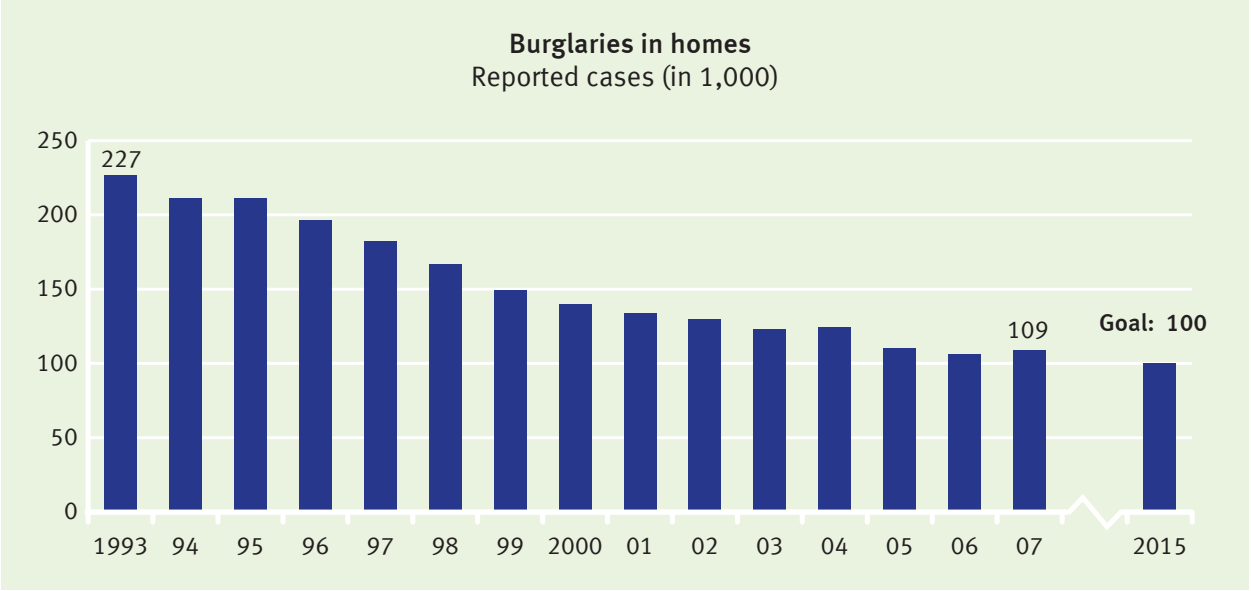
The 'German Health Interview and Examination Survey for Children and Adolescents 2007 – KiGGS' (Robert Koch Institute) provided age-specific results for 3- to 17-year-olds. According to these figures, between 2003 and 2006, 2.9% of the 3- to 6-year-olds, 6.4% of the 7- to 10-year-olds and, moreover, 8.5% of the 14- to 17-year-olds were obese. There were no obvious differences between boys and girls. An increased risk of being overweight or obese was found among children from families of a lower social status and among children whose mothers were also overweight. The causes of the increasing prevalence of obesity can be found, among other things, in a diet too rich in calories and a restricted programme of physical activity.

Underweight, with a BMI lower than 18.5, is the opposite phenomenon to that of obesity, and represents an equally important health risk. In 2005 women were considerably more often (4%) underweight than men (1%). It needs to be mentioned that 14% of young women between 18 and 19 years of age were underweight, and in the women between 20 and 24 there were still 11% who were underweight.

The indicator has relevance to, among others, indicators 9, 14a, b, 16 and 17.

Crime

Further increasing personal security



Source: Federal Criminal Police Office, Police Crime Statistics

15 Burglaries in homes

A safe environment that permits the citizens of a country to live without fear of crime or threats to their sense of well-being is an essential prerequisite for a properly functioning social system and social sustainability. An important indicator of personal protection against crime is the number of burglaries to private homes. Involving as it does the invasion of the personal sphere of its victims, this crime is regarded as particularly threatening. At the same time citizens can, by means of appropriate security precautions, actively contribute to the prevention of burglary.

This indicator includes all the burglaries in homes that were reported to the police. As a goal, it was established that by 2015 the number of burglaries per year is to be reduced to under 100,000.

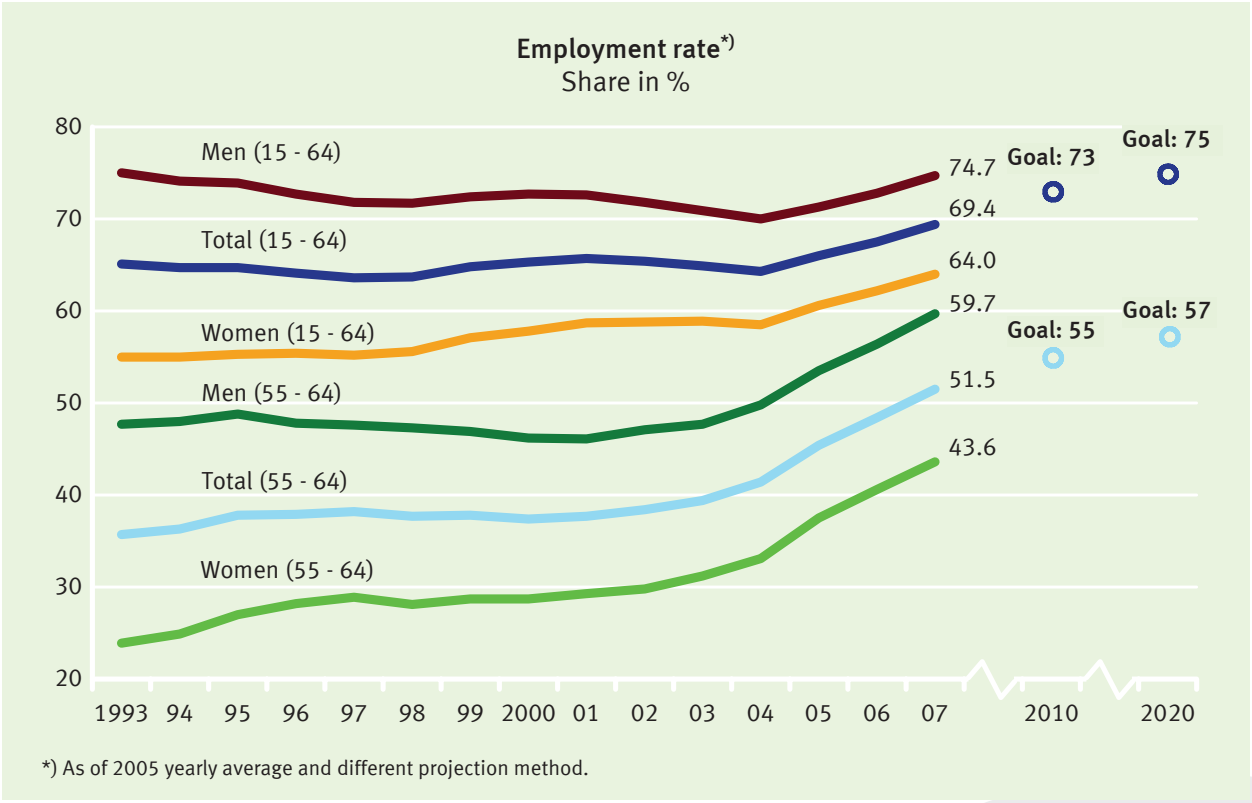
Break-ins in general are crimes that in the course of the last decade have been reported less and less often. Since 1993 the number of the known cases has declined by half. At about 109,000 cases in 2007, burglaries amounted to 1.7% of the total of 6.3 million criminal offences registered by the police. This reduction is based largely upon the rising awareness of the average citizen, who has increased his or her security in the face of burglaries through the installation of alarm systems or well secured windows and doors.

Despite a slight increase in the number of burglaries in 2007, the above-mentioned goal would be achieved if the trend observed during the last few years were to continue.

Burglaries are only one type of the crimes threatening personal safety and security. Aggravated theft (including breaking and entering) accounted for 20% of the offences recorded in the year 2007. Cases of fraud accounted for 15%, and bodily injury, 9%. However, in contrast to the generally declining number of burglaries (as for other forms of theft) the reported cases of fraud and bodily injury have increased in comparison to previous years. They went up in the period under examination, between 1993 and 2007, by 73% and 85% respectively, while the cases of burglaries in homes decreased by 52%.

Employment

Boosting employment levels



*) As of 2005 yearly average and different projection method.

Source: Federal Statistical Office, EU Labour Force Survey (Microcensus)

16a, b Employment rate

Because of the demographic change in Germany ('the ageing society'), there will be a lack of labour in the long term. Moreover, the social security system is threatened by an increasing lack of funds due to the shifting ratio of people drawing pensions to people in work. Therefore, it is necessary in the future to exploit our labour potential more effectively.

The goal of the Federal Government is thus to increase the share of people in work in the employable age group (15–64 years of age) by 2010 to 73%, and by 2020 to 75%. In addition, the employment rate among older people (55–64 years of age) is to be increased to 55% by 2010 and to 57% by 2020.

The overall employment rate rose from 65.1% in 1993 by 4.3 percentage points to 69.4% in 2007. At the same time the employment rate among the older work force increased from 35.7% to 51.5% (+15.8 percentage points) in the period from 1993 to 2007. While a continuation of the overall employment rate trend over the last few years is not sufficient to achieve the 2010 goal, it is certain that the employment rate for the older workforce will achieve it.

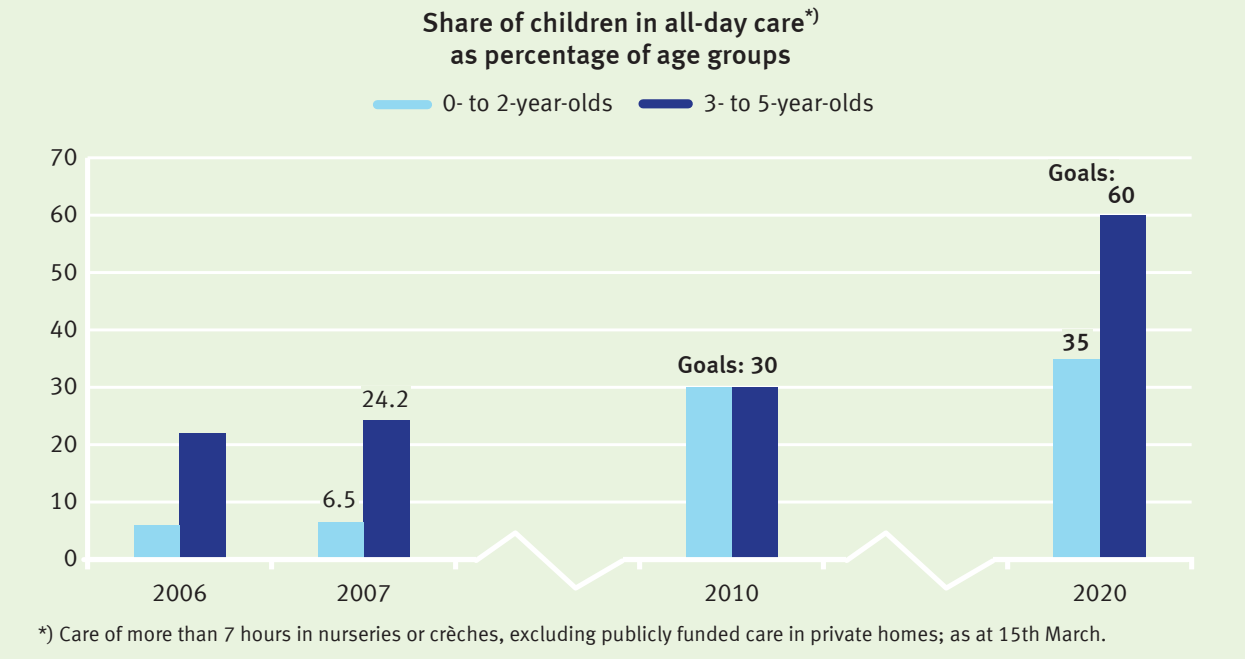
The clear rise in the employment rates that can be observed since 2005 is also reflected in the new methodological design of the EU Labour Force Survey that was used as the source for the employment rates and is integrated into the microcensus. The transition to the concept of collecting data during the current year since 2005 allows the microcensus to supply average annual results for the first time, but these are comparable to only a very limited extent to the results prior to 2004, which were obtained in reporting periods of a single week in the spring. Simultaneously with the transition to the continuous survey, the formulation of the questions and the fieldwork (for example, through conversion to laptop interviews) were optimised so that it is now easier to collect employment data in accordance with the labour force concept of the International Labour Organization. Quite apart from the changed period of reference and the methodological developments, the new method of projecting data also increases the number of employed in the microcensus.

Since 1993 the employment statistics for men and women have developed in opposite directions; in the period under investigation, the rate of employed men dropped by 0.3 percentage points to 74.7%, whereas the figure for women rose by 9.0 percentage points to 64.0%. In evaluating the increase in the employment rate of women, however, it must be taken into consideration that this was accompanied by a clear increase in part-time employment (+3.1 million), while the number of full-time employed women went down by 0.9 million.

Between 1993 and 2007, the development of the employment rate differed according to age group. In 15- to 24-year-olds the share went down by 6.6 percentage points to 45.3%. This decrease in particular reflects the longer average educational periods at school and university (see indicator 9c). A slight rise was noted in the rate for 25- to 54-year-olds (+4.1 percentage points). In 55- to 64-year-olds the rate went up by 15.8 percentage points to 51.5%, as mentioned above. The increase was especially significant from 2003 (+12.1 percentage points). As well as resulting from the methodological change in 2005, this increase can also be ascribed to demographic effects; starting at a low level in 1993, the employment rate of women in this age group has risen in a much more pronounced manner (+19.7 percentage points) than that of men (+12.0 percentage points).

Perspectives for families

Improving the compatibility of work and family life



*) Care of more than 7 hours in nurseries or crèches, excluding publicly funded care in private homes; as at 15th March.

Source: Federal Statistical Office

17a, b All-day care provision for children

The provision of childcare in line with demands improves the balance between family life and work. Women in particular continue to be prevented from taking up employment due to a lack of childcare, or couples decide against starting a family because they can not be sure of obtaining childcare. A better balance between family and job might also contribute to increasing the birth rate in Germany. But support for children in the context of all-day care provision is also an important contribution to equal opportunities and to the integration of foreign children and adolescents.

The goal of the Sustainability Strategy is to enable 30% of the children in both age groups to have all-day care by 2010. By 2020 the proportions are intended to be increased to 35% for 0- to 2-year-olds and 60% for 3- to 5-year-olds. In 2007, parents of 24.2% of the 3- to 5-year-olds (kindergarten age) took advantage of institutional all-day care in addition to their own educational activities, while for children under 3 years of age (nursery age) this figure was 6.5%. In comparison to the previous year, the only one for which there are comparable figures available, there was thus some slight progress in the area of all-day care in nurseries or crèches, most clearly evident among the 3- to 5-year-olds (+2.2 percentage points). The increase in all-day nursery care was 0.6 percentage points. To reach the defined goal for nurseries, efforts to create more all-day care facilities must be stepped up considerably.

The number of children in all-day care in crèches and kindergartens in 2007 was around 661,100. Around 19,600 additional children under 6 received publicly funded care in private homes. The number of children in part-time care was around 1.58 million.

In terms of childcare opportunities, after-school clubs and all-day schools also play a significant role. In 2007 about 100,900 children between 6 and 13 years of age were cared for on an all-day basis in after-school clubs full-time and 690,000 children part-time. The proportion of full-time pupils (out of all pupils in general education schools) in the school year 2006/2007 was 17.6%. However, this figure includes all forms of school, in other words it also includes pupils older than 13. In Grundschulen (primary schools) in the same school year 12.7% of the children received all-day care. In comparison to 2002, the number of full-time pupils went up markedly, from 874,000 to almost 1.5 million in the general school sector altogether and from 134,000 to around 400,000 in Grundschulen (source: Standing Conference of the Ministers of Education and Cultural Affairs, 4th March 2008).

Both in respect of all-day care in nurseries and crèches, and the availability of all-day primary school places, for example, a clear-cut difference exists between *Länder* in the east and west of Germany. Thus the all-day quota for under 6-year-olds (proportion of children in all-day care in relation to all the children in this age group) in all the eastern *Länder* and Berlin was clearly above the average, and in all the western *Länder* it was below the average. The highest percentage of all-day care for this age group was found in Thuringia at 57.5%, the lowest in Baden-Württemberg at 5.1% (both 2007). Among all-day pupils in *Grundschulen* the range was from 67.4% in Saxony to 2.3% in Lower Saxony (2006).

The ratio of available day care places to the number of children depends not only upon the supply of day care places, but also on the overall number of children and the birth rate. Here substantial differences can be identified for the individual *Länder*, and for this reason the fundamentally different challenges do not emerge clearly from the overall results for Germany. In all, the number of births in 2007 was about 685,000, considerably less than a decade earlier (765,000 births in 1995).

Equal opportunities

Promoting equal opportunities in society

*) Because of a change in the data source in 2002, the gender-specific wage differences could have increased by one percentage point.

Source: Federal Statistical Office

18 Wage difference between women and men

'Men and women are equal before the law. The state encourages the actual enforcement of the equality of men and women and works towards the elimination of existing disadvantages'. This statement of principle in the constitution is also the goal of a sustainable society. Disadvantages based upon gender in politics, business and society must be avoided in order to create equal opportunities.

Differences in pay between men and women in a modern business-oriented society are a sign of social inequality. A decrease in pay disparities is an indicator of progress on the road to equality. In 2006 the gender pay gap was on average 22%, which means that the average gross hourly wage for women with a working week of at least 15 hours and aged between 15 und 64 years was more than a fifth lower than that of men. The latest results (without taking the minimum weekly working hours or age into account) in fact show a pay discrepancy of 24% for 2006. For the previous years there is unfortunately no comparable data available. The Federal Government's goal is to aim for a reduction in the pay discrepancy to 15% by 2010 and to 10% by 2020.

Since 1995 the gender pay gap has scarcely changed. Should this trend continue, the goal set for 2010 will not be achieved.

Differences in pay between women and men—as also between other groups—are due to a number of factors, for example, the type of job exercised, professional experience and the position within a company. But activity in specific industries or in companies of differing sizes also plays a role, as do also differences in professional development.

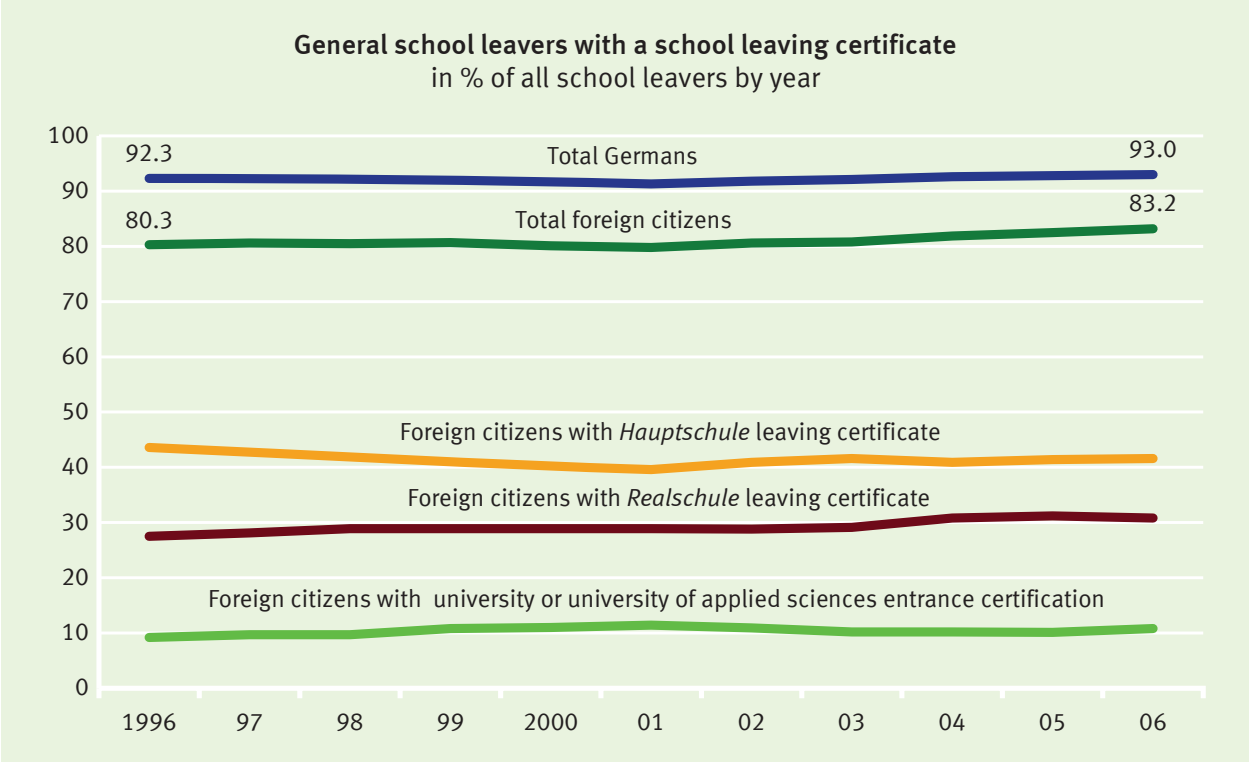
Often women work in branches or professions with lower opportunities for earning. Sectors with a high percentage of female employees include for example the clothing industry, retail sales, and the health, veterinary and social services sectors (each with a proportion of women employees of between 70% and 80%). On the other hand, men more frequently work in areas with comparably higher earnings, such as mechanical engineering and vehicle manufacturing. Women represent less than 20% of the employees in these areas. In 2006, for example, the gross monthly earnings of women with full-time employment in retail sales was 2,132 euros on average, while in vehicle manufacturing it was 3,157 euros. Men in these sectors on average earned 2,703 euros or 3,587 euros per month, respectively.

In the course of the last one and a half decades the formal qualifications of women have improved significantly (see indicators 9a and 9b). But even with the same formal qualifications, women often earn less. Differences in the career histories of men and women play an important role here. Women often have gaps or interruptions due to part time work, for example due to bringing up children or caring for relatives. These factors can restrict their careers and thus the development of salaries.

Although the range of childcare facilities has also improved (see indicator 17), in West Germany at least it is still by no means sufficient to enable women to combine paid work with raising children and thus at least avoid women having to take career breaks. The introduction of *Elterngeld* (paid parental leave) in 2007 should also make a major contribution to women having to take fewer breaks in their careers.

Integration

Integration instead of exclusion



Source: Federal Statistical Office

19 Foreign school leavers with a school leaving certificate

The integration of foreign citizens in Germany is an important prerequisite for cohesion within our society. A necessary condition for successful integration is an adequate system of school qualifications which opens up further educational and professional opportunities. For this reason the National Sustainability Strategy pursues the goal of increasing the proportion of young foreign school leavers who obtain at least a school leaving certificate from a *Hauptschule*, and by 2020 of bringing this in line with the corresponding percentage of German pupils.

The indicator shows the percentage of foreign school leavers within one year who leave general schools with at least a *Hauptschule* certificate. During the period between 1996 and 2006 this percentage increased from 80.3% to 83.2% and thus represents progress for these young people. Nevertheless, in 2006 the percentage of school leavers in possession of a certificate in this group was still clearly lower than that of German young people, for whom the proportion was 93.0%. In view of the desired goal substantial efforts are still necessary, especially as at the same time efforts are being made to increase the proportion of all school leavers who achieve certificates (see indicator 9a).

If we look at the certificates achieved, it is apparent that just under 42% of the foreign school leavers from general schools achieved a *Hauptschule* certificate in 2006, 31% achieved a certificate from the *Realschule*, and 11% earned an advanced technical college entrance qualification or university entrance qualification. For Germans the corresponding figures were 23%, 42% and 28%. Foreign young people are thus substantially under-represented in comparison to Germans, especially in terms of the higher level school leaving certificates. 16.8% of foreigners did not achieve any school leaving certificate from general schools (the so-called 'drop out percentage'), in comparison to 7.0% of German school leavers.

At the same time a better level of school education overall is evident for foreign young women in comparison to foreign young men. In 2006 only 13.5% of young women leaving general schools had no school leaving qualification, whereas for foreign young men the figure was 19.8%.

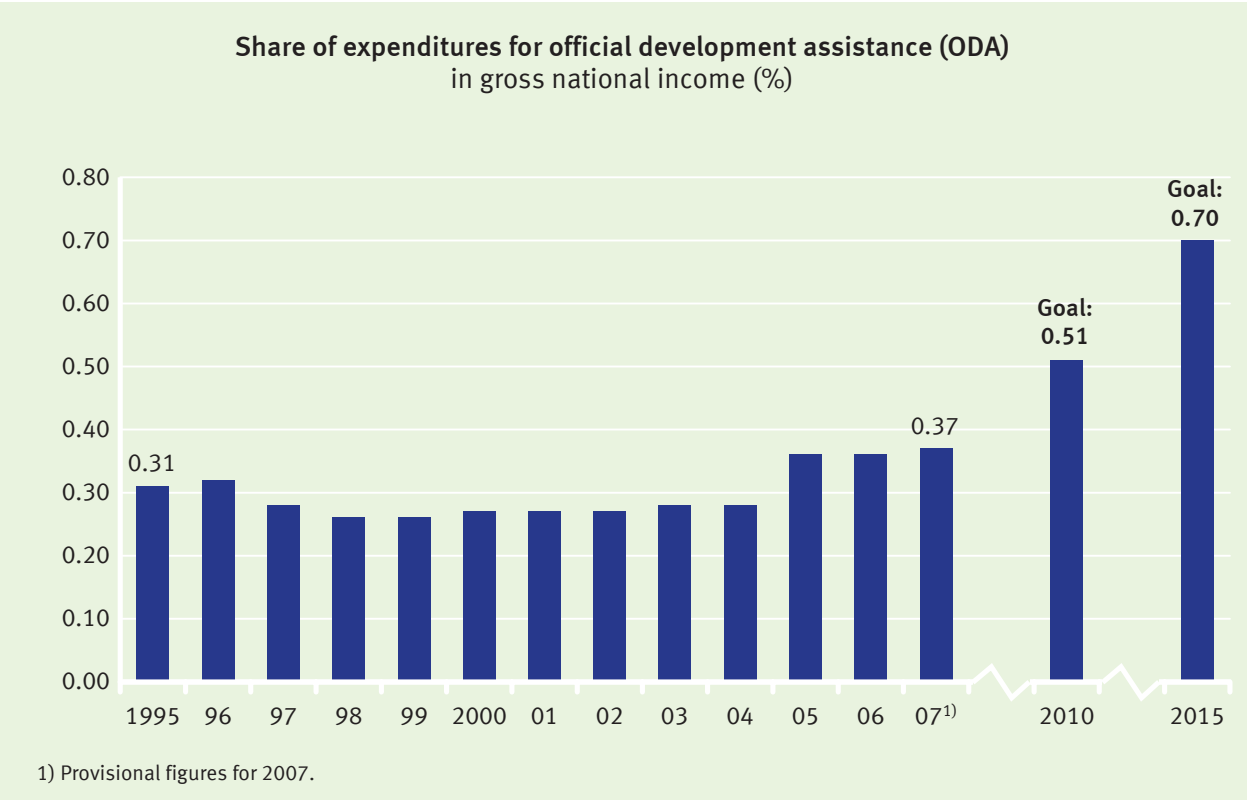
Besides school education, vocational qualification plays an important role in the integration of foreign fellow citizens into our society. In 2006 over half (51.4%) of the 25- to 29-year-olds of foreign origin had no vocational certificates or university degrees. Some 45% of the 30- to 34-year-olds had obtained no qualification by the end of their vocational training phase. The figures for Germans of the same age were 23% and 13% respectively. While more foreign women than men achieved a school leaving certificate, for vocational training it was the other way round: 48% of young foreign women aged 30 to 34 in 2006 had no vocational or university qualifications, compared to 42% of young men of foreign origin.

A sound knowledge of German is also of decisive importance for social integration. It is a prerequisite for leaving school with qualifications, as well as for participation in society generally. For this reason in 2005 integration courses for immigrants were introduced, which around 173,000 people had attended by 2007. Around 45% of participants passed the final examination. The Federal Government is making efforts to increase participation in and successful completion of these courses in the coming years.

At the end of 2006 around 7.3 million inhabitants in Germany possessed a foreign passport, i.e. 8.8% of the population. In the school year 2006/2007 around 898,000 foreigners attended general schools. 186,800 foreign pupils attended vocational schools. Thus the proportion of foreigners was 9.6% in general schools and 6.7% in vocational schools.

Development cooperation

Supporting sustainable development



1) Provisional figures for 2007.

Sources: Federal Statistical Office; Federal Ministry for Economic Cooperation and Development

20 Share of expenditures for official development assistance in gross national income

Through their development policies, industrialised nations contribute to reducing poverty worldwide, securing peace, achieving democracy, creating globalisation equitably and protecting the environment. In the context of these responsibilities German development policy is oriented towards the guiding principle of global sustainable development which is expressed equally through economic performance, social justice, ecological sustainability and political stability.

The indicator comprises public expenditure for development cooperation (Official Development Assistance: ODA) in relation to gross national income (GNI). ODA mainly includes expenditures for the financial and technical cooperation with developing countries as well as contributions to multilateral institutions for development cooperation (such as United Nations, European Union, World Bank, regional development banks). Furthermore, waivers of debt are also attributable to ODA along with the costs of specific development assistance provided in the donor country, such as costs of studying for students from developing countries or expenditure on development-specific research. Within the context of the UN International Conference on Financing for Development held in Monterey, the Federal Government undertook to contribute 0.33% of its GNI for development work until 2006. This goal was taken over in the National Strategy for Sustainable Development. For the future, as a result of the joint commitment of the EU to incrementally increase the expenditure on ODA, the Federal Government has set itself the goal of increasing its ODA percentage to 0.51% by 2010 and to 0.7% by 2015. In a recorded statement on the decision of the European Council the Federal Government has stated that, because of the extremely difficult German financial situation, innovative financial instruments must make a major contribution towards this goal. Thus in 2008 for the first time revenues derived from the public sale of emissions certificates will be used for international climate projects in the context of measures provided for by development policies.

According to provisional calculations, the proportion of ODA in the GNI in 2007 was 0.37% and thus slightly higher than in the previous year (0.36%). ODA payments stood at 8.96 billion euros in 2007. If ODA payments remain at the level as in the last five years (up to 2007), the sustainability goal of contributing 0.51% of GNI to development cooperation by 2010 will not be reached. Against this background the Federal Government has substantially increased these resources in 2008 and in the financial planning leading up to 2012.

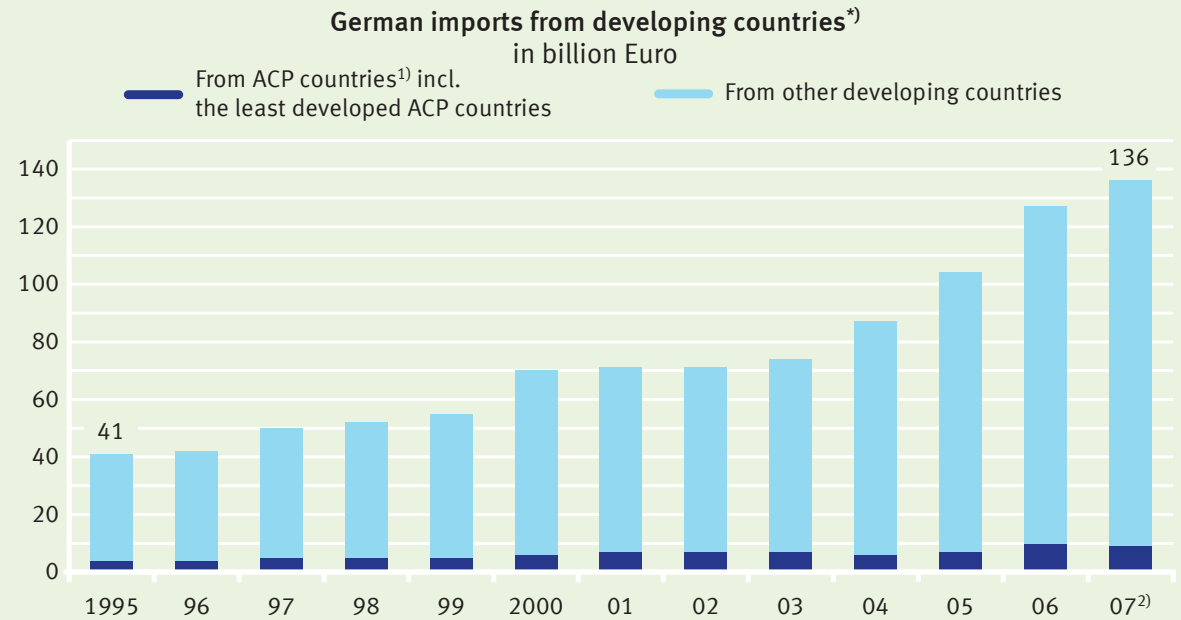
Well over two-thirds of the expenditure for ODA in 2006 was used for technical or financial cooperation with selected partner countries, for food aid, development-oriented emergency and refugee aid and for waivers of debt. Non-governmental development cooperation was also supported (for example, non-governmental organisations, political foundations, church relief organisations, the private sector). The remaining funds went to the UN, the EU, the World Bank or regional development banks.

In an international comparison, in 2007 Germany was the second largest donor of ODA in absolute terms after the USA. Great Britain, France, and Japan followed. In relation to their GNI, however, it was primarily the smaller countries which contributed a higher proportion to development cooperation. In 2007 Norway, Sweden, Luxembourg, the Netherlands and Denmark exceeded the 0.7% mark, as they have for many years.

In addition to official development assistance the private sector (for example, churches, foundations and associations) also contributes to development aid from donations and its own resources. Private development assistance remained roughly constant between 1999 and 2004 at around 900 million euros a year. In 2005 it increased to around 1.2 billion euros and in 2006 it was just short of 1.1 billion euros, equivalent to a 0.05% share of GNI (in 2006). Private direct investment in developing countries in 2006 amounted to 9.9 billion euros.

Opening markets

Improving trade opportunities for developing countries



*) Developing countries excl. advanced developing countries. 1) ACP = Africa, the Caribbean and the Pacific Area.
2) Provisional figures.

Source: Federal Statistical Office

21 German imports from developing countries

For their economic and social development the developing countries are dependent upon an open and fair system of trade, which enables them to sell both raw materials and finished products in the markets of the industrial and emerging countries. The figures for imports from the developing countries to Germany serve as an indicator of how far this goal has been achieved. The so-called advanced developing countries, such as South Korea, Israel and Singapore are not included in this.

At the end of the 1990s and again from 2004 imports increased markedly, from 41 billion euros in 1995 to 136 billion euros in 2007. This increase (+232%) is considerably larger than the increase in total imports to Germany (+127%). Thus the proportion of imports from developing countries to total imports between 1995 and 2007 increased from 12.0% to 17.6%.

Approximately 63% of the imports from developing countries in 2007 came from Asiatic countries (including China), 15.4% from Central and South America and 11.6% from Africa. The remainder came from European developing countries, the countries of the Middle East and Oceania.

In terms of imports to Germany, the most important developing country was China: in 2007 the value of imports from China was around 55 billion euros and was thus approximately six and a half times as much as in 1995. Thus imports from China greatly shape the development of the indicator. If these are excluded from imports from developing countries for the period from 1995 to 2007, it becomes apparent that the proportion of German imports accounted for by these countries has scarcely changed and stood at one tenth (10.5% in 2007). To this extent a greater participation of these countries in trade with Germany is hardly recognisable.

This also applies to imports from the African countries, the Caribbean and the Pacific Area (the ACP countries), with which the EU cultivates a special relationship. The value of the imports from these countries went up from 4.2 billion euros to 8.7 billion euros between 1995 and 2007. Their share of the total German import market has however remained virtually the same and was 1.1% in 2007. The group of the fifty least developed countries (LDCs), which for the most part also belong to the ACP states, developed their share of imports from 0.37% in 1995 to 0.43% in 2007.

As an EU member state Germany offers the ACP states and also the group of LDCs market access virtually free from customs duties and quotas in the context of various preference systems. Nevertheless, most of these countries have not been able to increase their export share within the EU to the same degree as has been possible for a country such as China. These developments suggest that in addition to the openness of markets there are other factors which influence the export opportunities of developing countries. These include for example the capacity to produce goods in sufficient quantity and quality, a functioning infrastructure and also political stability.

It is interesting to take a look at the groups of goods in which imports from developing countries took up an especially high percentage of total imports in 2006 (more than 25%). These include agricultural and forestry products (35% and 27%), coal and peat (27%), ores (65%), textiles (39%) and clothing (66%), leather and leather goods (52%), office equipment and data processing equipment (37%), communications engineering, radios and televisions (32%) as well as furniture, jewellery, musical instruments, sports articles and toys (35%). In comparison to 1996 the 'market share' of the developing countries has increased in particular in the areas of textiles, clothing and leather, data processing hardware, telecommunications engineering, furniture, jewellery etc.

Summary: presentation of the status of the indicators

The following summary shows the mathematically calculated status of the indicators in the target year in simplified form.

The basis for the calculation is the average annual change over the last five years up to the last respective year of the time series. Based upon this, the value which would have been achieved in the target year if this trend had continued unchanged has been calculated statistically.

On this basis the indicators have been subdivided into four groups:

The target value of the indicator has been achieved or the remaining 'distance' would be covered by the target year (deviation less than 5%).

The indicator is developing in the right direction, but if the annual trend continues unaltered there will still be a gap of between 5 and 20% which will need to be covered to reach the target value in the target year.

The indicator is developing in the right direction, but if the annual trend continues unaltered there will still be a gap of more than 20% which will need to be covered to reach the target value in the target year.

The indicator has developed in the wrong direction and if the annual trend continues unaltered the distance to be covered to reach the goal would become even greater.

This is not a forecast. The effect of measures decided upon at the end of the observation period (by 2007 or earlier) and of additional efforts by the players in subsequent years has not been taken into account. The actual development of the indicators in the target year can thus differ from the projected value, depending upon the changed political, economic and other background conditions.

Note:

No statistical trend is recognisable or calculable in the development of indicators 4 (Increase in land use for housing and transport), 5 (Species diversity and landscape quality), 9a (18- to 24-year-olds without a school leaving certificate), 11b (Intensity of passenger transport), 17a, b (All-day care provision for children) and 18 (Wage difference between women and men). The classification here suffers from major uncertainties.

Summary				
No.	**Indicator areas** Sustainability axiom	**Indicators**	**Goals**	**Status**
I. Intergeneration equity				
1a	**Resource protection** Using resources economically and efficiently	**Energy productivity**	Doubling between 1990 and 2020	
1b		**Raw material productivity**	Doubling between 1994 and 2020	
2	**Climate protection** Reducing greenhouse gases	**Greenhouse gas emissions**	Reduction of 21% compared to 1990 until 2008/2012	
3a	**Renewable energies** Strengthening a sustainable energy supply	**Share of renewable energy sources in total primary energy consumption**	Increase to 4.2% by 2010 and to 10% by 2020	
3b		**Share of renewable energy sources in electricity consumption**	Increase to 12.5% by 2010 and to at least 30% by 2020	
4	**Land use** Sustainable land use	**Increase in land use for housing and transport**	Reduction in daily increase to 30 hectares by 2020	
5	**Species diversity** Conserving species—protecting habitats	**Species diversity and landscape quality**	Increase to the index value 100 by 2015	
6	**National debt** Consolidating the budget—creating intergeneration equity	**National deficit**	Structurally balanced public spending; federal budget without net borrowing from 2011 at latest	
7	**Provision for future economic stability** Creating favourable investment conditions—securing long-term prosperity	**Gross fixed capital formation in relation to gross domestic product (GDP)**	Increase in the share	
8	**Innovation** Shaping the future with new solutions	**Private and public spending on research and development**	Increase to 3% of GDP by 2010	
9a	**Education and training** Continuously improving education and vocational training	**18- to 24-year-olds without a school leaving certificate**	Reduction in proportion to 9% by 2010 and 4.5% by 2020	
9b		**25-year-old university graduates**	Increase in proportion to 10% by 2010 and 20% by 2020	
9c		**Share of students starting a degree course**	Increase to 40% by 2010, followed by further increase and stabilisation at a high level	
II. Quality of life				
10	**Economic prosperity** Raising economic output by environmentally and socially compatible means	**Gross domestic product per capita**	Economic growth	
11a	**Mobility** Guaranteeing mobility—protecting the environment	**Intensity of goods transport**	Reduction to 98% in comparison to 1999 by 2010 and to 95% by 2020	

No.	Indicator areas Sustainability axiom	Indicators	Goals	Status
11b		**Intensity of passenger transport**	Reduction to 90% in comparison to 1999 by 2010 and to 80% by 2020	
11c		**Share of rail transport in goods transport performance**	Increase to 25% by 2015	
11d		**Share of inland water transport in goods transport performance**	Increase to 14% by 2015	
12a	**Farming** Environmentally sound production in our cultivated landscape	**Nitrogen surplus**	Reduction to 80kg/hectare on land used for agriculture by 2010, further reduction by 2020	
12b		**Organic farming**	Increase of the share of organic farming on land used for agriculture to 20% in coming years	
13	**Air quality** Keeping the environment healthy	**Air pollution**	Reduce to 30% compared to 1990 by 2010	
14a	**Health and nutrition** Living more healthily for longer	**Premature mortality** (cases of death per 100,000 residents under 65) **men**	Reduction to 190 cases per 100,000 by 2015	
14b		**Premature mortality** (cases of death per 100,000 residents under 65) **women**	Reduction to 115 cases per 100,000 by 2015	
14c		**Proportion of adolescents who smoke** (12- to 17-year-olds)	Decrease to under 12% by 2015	
14d		**Proportion of adults who smoke** (15 years and older)	Decrease to under 22% by 2015	
14e		**Proportion of obese people** (adults, 18 and older)	Reduction by 2020	
15	**Crime** Further increasing personal security	**Burglaries in homes**	Reduction in cases to under 100,000/year by 2015	
	III. Social cohesion			
16a	**Employment** Boosting employment levels	**Employment rate (total)** (15- to 64-year-olds)	Increase to 73% by 2010 and 75% by 2020	
16b		**Employment rate (older people)** (55- to 64-year-olds)	Increase to 55% by 2010 and 57% by 2020	
17a	**Perspectives for families** Improving the compatibility of work and family life	**All-day care provision for children** (0- to 2-year-olds)	Increase to 30% by 2010 and 35% by 2020	
17b		**All-day care provision for children** (3- to 5-year-olds)	Increase to 30% by 2010 and 60% by 2020	

No.	Indicator areas Sustainability axiom	Indicators	Goals	Status
18	**Equal opportunities** Promoting equal opportunities in society	**Wage difference between women and men**	Reduce the difference to 15% by 2010 and to 10% by 2020	
19	**Integration** Integration instead of exclusion	**Foreign school leavers with a school leaving certificate**	Increase in the proportion of foreign school leavers with at least *Hauptschule* certificate and alignment with quota for German school leavers by 2020	
IV. International responsibility				
20	**Development cooperation** Supporting sustainable development	**Share of expenditures for official development assistance in gross national income**	Increase to 0.51% by 2010 and 0.7% by 2015	
21	**Opening markets** Improving trade opportunities for developing countries	**German imports from developing countries**	Further increase	

III. Federal Government conclusions from the Federal Statistical Office's analysis

How sustainable is Germany? The independent analysis conducted by the Federal Statistical Office provides points of reference for answering this question. The starting point is the developments between 2002 and 2007 and in part—if no other data are available—also only between 2000 and 2005. Therefore measures which have either been implemented recently or are being initiated for the future due to the Strategy for Sustainable Development have not been considered in the calculations. This includes for instance the considerable increase in funds for development cooperation which were provided between 2008 and 2009 and included in financial planning up to 2012 with a view to achieving an ODA percentage of 0.51% by 2010.

Although the Federal Government does not agree with all of the statements issued by the Statistical Office, the analysis shows one thing clearly: in a large number of areas there remains a massive need for action on every political level and in society as a whole. Even if only five years have elapsed since the Sustainability Strategy was signed off, the total development is not yet satisfactory.

Positive developments

Positive developments can be found in the following areas:

The goal of decreasing greenhouse gas emissions (indicator 2) will probably be achieved on the basis of the extensive measures which the Federal Government has implemented. The fact for example that the area of renewable energy (indicator 3) has developed so positively is the result of the efforts on the part of the Federal Government in the last few years and which have made Germany a leader on an international comparison. The national deficit (in % of GDP—indicator 6) stood at 0% in 2007. GDP per head of the population has also clearly increased (indicator 10). On the other hand, premature mortality in people under 65 has decreased (indicator 14a), and the number of burglaries in the last ten years has declined by almost half (indicator 15). The clear increase in the number of people in work (indicator 16) is also very positive. The ambitious goal set for 2006 in the 2002 Strategy, of increasing the proportion of development expenditures in gross domestic income, the so-called ODA quota (indicator 20), to 0.33% was exceeded yet again, just as it was in 2005 and 2006, with the figure for 2007 standing at 0.37%. Imports from developing countries were also increased (indicator 21).

Moreover, there are a number of indicators in which development is moving in the right direction. These need to be observed carefully, and where necessary the development must be supported through additional measures.

An example: Air pollution

Air pollution (indicator 13) has markedly improved in the last few years. It decreased by 55% since 1990. The fact that massive progress has been made in terms of specific pollutants—with the greatest progress in the area of sulphur dioxide—makes clear how effective the measures taken by the Federal Government have been. It is still however uncertain whether the mathematically derived goal for the total indicator will be achieved. Reductions in emissions of ammonia, especially those deriving from animal husbandry, are especially difficult. For this reason the Federal Government will be making additional efforts to improve nitrogen efficiency.

Another example is the area of private and public expenditure on research and development (indicator 8). The trend points upwards. Although the expenditure by Germany is clearly above the corresponding expenditure by other EU members and roughly on a par with the USA, total expenditure must nevertheless clearly be increased so that the goal set for 2010 can be reached. At least expenditure by the Federal Government since 2006 has clearly increased, although this fact is not yet reflected in the figures used by the Federal Statistical Office.

Challenges

Altogether politics, and along with it the whole of society, still faces major challenges if we really want to meet our responsibility for future generations and create greater equity both in Germany and from a global perspective.

In the goals it has set and the indicators it has selected, the Federal Government has consciously not restricted itself to areas which it could construct on its own, or in some cases even to a large extent. This is because the objective was to portray a total picture of sustainability. The existing need for action thus does not relate solely, and also not always mainly, to the Federal level.

Education

Germany is far from achieving the proposed sustainability goals for the percentage of 18- to 24-year-olds with a school leaving certificate (indicator 9a), of the proportion of 25-year-olds with a university degree (indicator 9b) or the first-year university student quota (indicator 9c). Education has a key function for sustainable development. In view of the particular significance of education for sustainability—amongst other things with regard to the economic potential of society—and social aspects, but also for imparting the skills which are required in practice for achieving sustainability, the lack of progress is especially problematical. Unfortunately the Federal Government has only very limited opportunities for influence in this area; definite progress—reinforced by Reform of Federalism I—can not be made without corresponding efforts by the *Länder*. The Federal Government offers its full cooperation in this.

Intensity of transport

The indicators for the intensity of both goods and passenger traffic (indicators 11a and b) are currently moving away from achieving the goals in these areas; it is not anticipated that the intermediate goal set for 2010 will be achieved. As far as goods transport is concerned, this is chiefly an expression of international developments such as the greater economic interchange with Eastern Europe, a positive development for the European internal market; the consequence, however, is an increase in transit traffic with its negative effects.

Protecting the climate, securing our energy supply and making mobility affordable demonstrate the great significance for the sustainability of traffic which is inherent in eliminating the direct relationship between the growth of traffic and greater use of energy. The Federal Office's analysis demonstrates that despite increased traffic volumes, great progress has been made in reducing both relative and absolute energy consumption. The Federal Government continues to make every effort to reduce the intensity of transport and will be closely observing the possible effects of increased fuel costs on the development of motorised transport, especially in the area of passenger transport. The measures for reducing the intensity of goods traffic are part of the Federal Government's Master Plan on Goods Transport and Logistics. The Federal Government thus adheres to the goals for the intensity of goods traffic for 2010 and 2020.

Movement of goods by rail and inland water

For this indicator too (11c) the proportions have not been moving quickly enough in the desired direction.

The government is confident that in view of the measures in the Master Plan on Goods Transport and Logistics, as well as in the context of rising prices for fossil fuel, rail transport in the long run will obtain further shares of goods transport. Inland waterway transport as an environmentally friendly means of transporting loads over large distances is being further supported by the Federal Government. For this reason the goals for the strategy for 2015 are being maintained.

Organic farming

The percentage of land devoted to organic farming (indicator 12b) has not increased to the desired extent. This results in appropriately produced produce being to some extent imported from distant regions of the world. The increasing proportion of organic produce needs to be increasingly covered by the domestic farming industry in future; the goal is a 20% share of agricultural land over the next few years. The Federal Government will be creating the legislative context accordingly, so that further businesses can decide on this type of agriculture.

Wage difference between women and men

No major movement has been discernible in this indicator (18) since 1995, despite changes in Federal Governments. As justified as the goal may be, this clearly shows the limited opportunities for influence by politics in this area. As this goal needs to be pursued by society as a whole, an appeal is hereby made to all the players involved, especially parties involved in collective bargaining.

Foreign School leavers with a school leaving certificate

The increase in the number of school leaving certificates by 3% to 83.2% since 1996 under indicator 19 is unsatisfactory in view of the goal. Measures by the State in this area need chiefly to be undertaken by the *Länder*, which are responsible for school education.

Conclusion

The many positive developments make it clear that consistent action can bring about change, and can be seen as encouraging. Altogether, however, the social reform process of sustainability has neither been completed nor are we even already close to a satisfactory overall level. This realisation should serve as a stimulus to future action. If Germany is to become more sustainable, this will require all the State and social forces to work together.

For this to happen, awareness of the guiding principle of sustainable development and the National Sustainability Strategy must be further increased amongst the general public, as a prerequisite for the goals being more consistently incorporated into the actions of the players involved. Activities such as those of the Sustainable Development Council are extremely important for this; in addition, other initiatives must be taken by the Federal Government itself. In this context the individual departments are being addressed to spread the word.

It is also important that goals of the Strategy which are essentially the responsibility of the *Länder* are indeed adopted by them. The Federal Government thus welcomes the proposals of the *Länder* (Chapter G) to enter into a dialogue with the Federal Government on the indicators. The appropriate discussions could form the basis for the next stage in the further development of the goals and indicators for the 2012 Progress Report.

C

Sustainability in Concrete Terms: Major Priorities

The following priorities show the spectrum of questions which must be addressed by sustainable development.

I. Climate and energy

1. Significance of the subject for the guiding principle of sustainable development

Protecting the climate and adapting to climate change is one of the greatest challenges facing mankind in the twenty-first century.

In part the consequences of global climate change are already apparent, especially the more frequent occurrence of extreme weather events, the rise in sea levels and the spread of desert areas. According to the figures of the Münchener Rück insurance company, the economic damages caused by extreme weather events in the last thirty years have increased by a factor of fifteen. Tropical storms in 2005 claimed more than 3,500 victims worldwide, and caused financial damages of 200 billion US dollars.

Sir Nicolas Stern's Report of October, 2006, 'The Economics of Climate Change', concluded that if unbridled climate change continues, damage of between 5 and 20% of global GDP can be expected. This is greater economic damage than that caused between 1914 and 1945 by two world wars and a world economic crisis together. Stern calculates that the costs of preventing this would amount to approximately 1% of global GDP.

People in the coastal regions and river deltas of the countries in the southern hemisphere would probably be worst hit. Climate protection is thus also a question of equity, since climate change most threatens those who have least caused it.

But dangers and damage due to climate change are also to be feared in Germany. An increase in the average temperature of between 2°C and 3.5°C is probable, which will increase the incidence of heat waves. Rainfall in summer will decline, so that a decline in crop levels of up to 30% is feared in sandy and dry regions as well as an increase in forest fires. While on the one hand the natural replenishment of ground water will decline, on the other hand storms and heavy rainfall will become more frequent. And, finally, global warming can lead to the spread of disease-causing organisms from warmer climates among people, animals and plants.

The scientific community is in agreement: climate change caused by mankind can no longer be prevented, but it can and must be checked in order to avoid the most serious consequences. This applies especially to the developing countries, which are most strongly affected by climate change.

At the same time the costs of doing nothing exceed the costs of protecting the climate may times over. The economy and society must respond to this and act accordingly.

For this reason during its EU and G8 Presidency in 2007, Germany placed policies on climate protection and energy at the top of the agenda for the heads of states and governments. The resolutions on climate policy passed here are important steps towards sustainable development. At the Conference of the Parties to the United Nations Framework Convention on Climate Change in Bali in December 2007, the community of states, supported strongly by Germany, resolved upon a mandate for global negotiations on climate protection. The negotiations are scheduled to be concluded by the end of 2009 with a new international climate protection agreement at the United Nations Conference of the Parties at the Climate Change Conference in Copenhagen.

The Federal Government and the EU strongly support such an agreement. At the meeting of the G8 countries in Japan in July 2008, all of the participants made it a common goal to achieve at least a 50% reduction in greenhouse gas emissions by 2050.

The figures made public by the Intergovernmental Panel on Climate Change (IPCC) in 2007 made clear how urgently collaborative action on climate protection is needed for sustainable development:

- The rise in global temperatures has accelerated. It is deemed to be 'certain knowledge' that since 1750 worldwide human activity has on average heated the climate.
- Assuming that there is no reduction in greenhouse gas emissions and no measures for adjusting to climate change are adopted, scientists expect grave consequences for mankind and the environment worldwide by the end of the 21st century, which will drastically affect the opportunities for the development of coming generations.
- In the opinion of the heads of states and governments in the EU, global warming of more than 2°C in comparison with the pre-industrial period is not acceptable in the light of the findings of the IPCC.
- The European goal of 2°C requires a reversal of current trends in global emissions in the coming 10 to 15 years. Every industrial state must drastically reduce its emissions. Emerging countries like China must contribute to this by separating economic growth from emissions.
- In order to reach the 2°C goal, by 2050 worldwide emissions must be reduced by 50% compared to 1990.
- On the principle of shared but differentiated responsibilities, this means a reduction in industrial countries of at least 60–80% by 2050.
- Greenhouse gases are produced chiefly via the release of carbon dioxide during combustion processes. In agriculture, methane is released especially in ruminant animal husbandry and the cultivation of rice, and nitrous oxide as a result of the release of nitrogen from fertilisers. At the same time carbon dioxide is also bound by agricultural and forestry production. In addition small amounts of halogenated gases which are highly damaging to the environment are generated from various sources, chiefly from the refrigeration sector.

It is therefore important to apply a bundle of measures simultaneously at many points in order to achieve the necessary reductions. The central demands of the guiding principle of sustainable development for the protection of the climate must be borne in mind:

- The climate change caused by human agency must not be allowed to become a burden for future generations.
- The emissions of greenhouse gases by individual countries and groups of states must not take place at the cost of other regions.
- For this reason a just distribution of the use of the atmosphere and efforts to protect the climate must be guaranteed.
- Rapid action is necessary, because the benefits of immediate and concerted action by all states far outweigh the financial costs of inactivity.
- The development of the climate and climate policy activities are directly connected to economic and social processes, structures and interests. Climate protection from a sustainable development angle takes these relationships into account: it accepts the challenge of structural change, includes the economic causes and effects in the approaches to solutions, and pays attention to the balance of social and economic interests at both national and international level.

These declarations make one thing very clear: the use of global raw materials and resources is a central theme in human rights, amongst other things because poor countries are disproportionately burdened by the consequences of climate change and because possible conflicts and streams of refugees as a result of climate changes present us with major tasks. Against this background, efforts to achieve effective protection of the climate are also a prerequisite for global sustainable development. In parallel efforts are also necessary to modify the economy and society in respect of the climate changes which have already begun.

At the Bali climate conference in December 2007, the community of states accepted the challenge. All the states acknowledged their responsibility for climate protection. The resolutions at Bali provide

a sustainable and comprehensive basis for the negotiation of an international climate protection regime for the period from 2012. The so-called Bali action plan stated that the Framework Convention on Climate Change would involve negotiations on

- the level of aspiration of the future regime, which must take account of the results of the IPCC report,
- measures for the reduction of greenhouse gas emissions, differentiated according to the responsibility for climate change and the possibility of reducing emissions,
- measures for reducing deforestation in developing countries,
- adaptation to climate change,
- development and transfer of technologies for reduction and adaptation as well as
- financing future climate protection regimes.

The discussions are intended to be concluded in December 2009 at the climate conference in Copenhagen. The discussions are taking place in a negotiation group set up for this purpose, which first met in April 2008.

At the Bali conference, the Kyoto Protocol member states also agreed to aim for reduction parameters of 25–40% for industrial states by 2020 compared with 1990 as the basis of their future obligations. Since the efforts of all industrial states should be comparable, these figures also have an indirect effect on the actions of the USA, which did not ratify the Kyoto Protocol.

2. Goals and indicators

a) EU goals

On 8th/9th March 2007 the heads of state and government in the EU under the direction of the Federal Chancellor passed a pioneering resolution on future climate policy. The resolution takes the connection between energy policy and climate protection seriously and links ambitious climate protection goals with wide-reaching measures.

Results of the European Council

- By 2020 EU greenhouse gas emissions in the EU are to be reduced by 30% compared with 1990 emission levels, provided that other industrial countries commit to comparable emissions reductions and the economically further advanced developing countries make a contribution in accordance with their responsibilities and respective capabilities.
- Irrespective of the international negotiations, the EU has already made a commitment to reducing emissions by at least 20% by 2020 compared to 1990.
- The European Council endorses the view that absolute commitments to reducing emissions form the backbone of a global carbon dioxide market. In this, the developing countries must continue to accept the role of pioneers by undertaking to reduce their greenhouse gas emissions by 2020 by 30% compared to 1990. At the same time they should also keep their attention upon the goal of jointly reducing their emissions by 2050 by 60–80% compared to 1990.
- For the proportion of total energy use attributable to renewable energy sources, the Council resolved on a binding goal of 20% by 2020. Included in this figure is a proportion of biomass fuels of 10% of fuel use, amongst other things on the assumption that these will be produced sustainably and that second generation technologies are available.
- In addition energy efficiency in the EU must be increased. The goal is to save 20% of EU energy consumption by 2020, measured by the forecasts for 2020.

b) Goals for Germany

Germany will make a significant contribution to the achievement of the EU goals. In order to clearly represent Germany's contribution as well as the degree to which of goals are achieved in this area, the indicators 'Greenhouse gas emissions', 'Energy productivity' and 'Share of renewable energy sources' are core points in the National Strategy for Sustainable Development. The Federal Government has formulated the following goals in particular to date:

- As a German contribution to an international climate protection agreement from 2012 onwards, the Federal Government is offering to reduce emissions to 40% below 1990 levels by 2020. This offer assumes that during the same time period the EU will reduce its emissions by 30% compared with 1990 and that other states will accept comparably ambitious goals.
- Energy productivity, that is, the relationship between GDP and primary energy consumption, is to be doubled in Germany by 2020 in comparison to 1990 levels.

- By 2020 the use of renewable energy in all sectors needs to be greatly expanded: in electricity production this means an increase in its share from 14.2% (2007) to at least 30% (within the parliamentary process for amending the 'Renewable Energy Resources Act' in order to extend the production of electricity through the use of renewable energy, the German Bundestag has set a goal of 30% by 2020) followed by continuous further expansion; in heat production an increase of the share from 6.6% (2007) to 14%. By the middle of the century, around half of the energy consumption is to be covered by renewable energy.

- In addition, the goal which is binding under international law of a reduction in greenhouse gas emissions of 21% compared to the reference years (1990/1995) by 2012 still applies. The Federal Government has committed itself to this by ratifying the Kyoto Protocol, the international agreement on the reduction of greenhouse gas emissions.

Other aspects of sustainable development to be taken into account in terms of sustainable development over and above these goals include:

- Climate protection requires a way of viewing things in a particular fashion which takes account of the mutual disruptions and influences of different actions and needs. Too rapid climate changes also pose high risks for economic stability, security and equity. It is only where both people and ecological systems are able to adapt to the speed of climate change that, for example, conflicts over land and water can be resolved. Only then can the variety of life on our planet develop further without suffering even greater losses.

- Climate protection and adapting to climate change over the next few years and decades will be a stimulus for an abundance of innovations in the economic, technical and social arenas. For Germany this can also generate economic opportunities, especially in climate-friendly technologies. At the same time attention must be paid to ensuring that this adaptation is affordable and that it keeps pace with economic development—this applies equally to industrialized and emerging countries. For this reason the Federal Government is taking cost-efficient measures which will overburden neither companies nor consumers.

- The triangle of goals comprising security of supply, cost effectiveness and environmental compatibility remains the guideline for the Federal Government's energy policy. This entails the energy sector and industry having a reliable and competitive legislative context for their investments. Consumers also need a reliable legislative context for their consumption and investment decisions.

- Climate change, especially in the agricultural, forestry and fisheries industries, requires a great deal of adaptation, both with regard to the stability of the ecological systems and the cost-effectiveness of production, and with regard to minimising risks.

c) Goal achievement

Since 1990 Germany has greatly reduced its emissions of greenhouse gases. In relation to the basis year in the Kyoto Protocol, total emissions converted to CO_2 equivalents had fallen by 2007 by around 20.4% (provisional results: in 2006 it was 18.4%). Thus in order to achieve the Kyoto goal as of 2007 there remained only 0.6 % points to be achieved by 2012. Even if the goal of indicator 2 (Greenhouse gas emissions) has thus been virtually achieved, additional efforts still remain necessary in order to maintain these results—for example, even with a colder winter.

Energy productivity increased in Germany between 1990 and 2007 by just under 40%. The increase in productivity means that energy is being used more efficiently. Energy consumption has, however, only declined by 7% in absolute terms, as during the same time period economic growth of 30% was achieved. In order to achieve the goal of indicator 1a (Energy productivity) by 2020, an even higher increase in energy productivity is necessary, and the measures adopted in the energy and climate programme of the Federal Government are contributing to this.

Between 1990 and 2007 the proportion of primary energy use attributable to renewable energies rose from 1.3% to 6.7% (corresponding to a proportion of end energy use of 8.6% as at June 2008). Thus the goal of at least 4.2% set for 2010 in the 2002 German Sustainability Strategy had already been clearly exceeded three years early. The proportion of electricity consumption attributable to renewable energies went up from 3.4% to 14.2%. In this way Germany's goal of covering at least 12.5% of its electricity supply through renewable energies

by 2010, which also corresponds to the goal for 2012 agreed up to now at a European level, was also achieved in 2007.

3. Concrete steps towards further climate protection

a) The Federal Government's energy and climate package

With the cornerstones which were decided upon on 23rd and 24th August 2007 in Meseberg, the Federal Government presented an Integrated Energy and Climate Programme. Implementation in concrete measures followed with the cabinet resolutions of 5th December 2007 and 18th July 2008. A section of these laws is still being debated in Parliament.

This programme provides the basis for the Federal Government's further development of a future-oriented energy and climate policy. At the same time this policy accepts the challenges which have arisen through developments on the world energy markets, especially in terms of price. Above all the Federal Government sees two keys to this: energy must be used much more efficiently than it is today, and we need more renewable energies and low CO_2 technologies.

The package of laws, regulations and further measures which was signed off represents an important step towards achieving the climate and energy goals. At the same time it benefits Germany as a location. As a result of the lower consumption of coal, oil and gas for transport, heating, hot water and power generation due to higher energy efficiency and the use of renewable energy sources, Germany's dependence upon energy imports will decrease.

The key to this is innovative energy technologies both on the supply side, where energy is transformed (for example, in the power station sector or in the use of renewable energy), as well as on the demand side, in other words where the energy is used (for example, for equipment, vehicles or buildings).

Energy efficiency:

When energy prices are rising, the construction of energy-saving buildings, machinery and pumps, equipment and vehicles creates competitive advantage not only on the domestic market, but also in export markets. The increase in energy efficiency reduces dependence on energy imports and considerably contains the financial burden on consumers and the economy. This is also a correct answer to rising energy prices.

Measures

Combined heat and power
In the area of electricity the Federal Government favours the further development of cogeneration of electricity and heat (combined heat and power—CHP). In order to use fuel efficiently, the proportion of electricity production from high-efficiency cogeneration plants needs to be doubled from the current figure of around 12% to around 25% by 2020. The amendment of the 'Combined Heat and Power Act', by means of which both construction of new cogeneration plants and grids and also the development and modernisation of existing ones will be supported, is an important building block in achieving this goal. This measure will be supplemented by the voluntary agreement on CHP negotiated with industry.

Amendment of the Energy Savings Regulation
Through the amendments of the German 'Energy Conservation Act' (EnEG) and of the 'Energy Saving Ordinance' (EnEV), as of 2009 the energy requirements for new buildings and for larger changes to existing buildings will be increased by an average of 30%. In addition, enforcement will be more consistently structured. In an additional step (proposed for 2012) energy requirements will be raised again by the same order of magnitude. Added to this will be the long-term and step-by-step replacement of night electrical storage heaters under the imperative of cost effectiveness. The amendments of the 'Energy Conservation Act' and the 'Energy Saving Ordinance' are currently undergoing the legislative or regulatory process.

Support programmes for the energy-efficient modernisation of buildings and social infrastructure
The existing programme for CO_2-related building modernisation is being restructured and stabilised beyond 2009 until 2011 at the current level. Additionally the energy-saving potential already present in urban structures and social infrastructure will be better exploited. Up to 200 million euros from the programme will be used to subsidise the interest on loans to municipalities.

The programme for the energy-efficient modernisation of Federal buildings will be stabilised beyond 2009 up to 2011 at the current level.

For 2008 the *Investitionspakt Bund-Länder-Kommunen* ('Federal Government-*Länder*-Municipalities investment pact') for the modernisation of the social infrastructure to increase energy efficiency has been agreed with the *Länder*. It is aimed at municipalities which are experiencing especially difficult budget constraints. The Federal Government is making 200 million euros of financial assistance available, and together with funds provided by the *Länder* and the municipalities the total amount of funding available is 600 million euros.

Amendment of the *Energiewirtschaftsgesetz* ('Energy Industry Act') for the liberalisation of monitoring devices
Complete deregulation of both the installation and the reading of meters in the aims of competitiveness. From 2010 there will be a general obligation on metering point operators to supply new meters which satisfy the standards for improved consumer information under EU legislation

(Article 13, paragraph 1 of the Directive 2006/32/EEC) shall exist. In new buildings the installation of such meters is to become standard, provided this is technologically feasible and economically acceptable. In addition, the demands of the customer that his or her energy supplier must agree to provide bills for a term of less than a year (monthly, quarterly- or semi-annually) will be met (Article 13, paragraph 2, sentence 3, of the above-named EEC Directive). The necessary amendments to the 'Energy Industry Act' were passed on 6th June 2008 by the German Bundestag, and the associated statute was passed on 18th June 2008 by the Cabinet.

General administrative regulations/guidelines on the procurement of energy-efficient products and services
By passing the general administrative regulations/guidelines for environmentally friendly and energy-efficient procurement, the Federal Government has set a good example. They have been in force since 24th January 2008, and must be used by all public bodies awarding contracts at the Federal level. Energy-efficient equipment and services will be encouraged by a preferential procurement procedure. *Länder* and municipalities are requested to examine whether they will adopt the Federal regulation.

Energy efficiency remains a challenge

Energy efficiency is one of the win-win areas of climate protection policy. In all cases, savings in energy also mean savings in costs. For this, a variety of technical and also regulatory measures are necessary. The efficiency of a wide variety of building types must be improved and the use of energy by equipment reduced.

Germany has already achieved a high degree of energy efficiency. Nevertheless, substantial additional efforts are necessary in order to reach the ambitious goals of the Sustainability Strategy as also laid down in indicator 1a (Energy productivity).

Efficient power plants with low greenhouse gas emissions

The goal for 2020 is to cover at least 30% of the electricity supply by renewable energy. By this time the remainder—in addition to electricity from existing nuclear energy plants—must be produced from fossil energy sources.

Catchword nuclear energy

Within the Federal Government there are different opinions on the continued use of nuclear energy.

While in part in view of the security of the energy supply, the rise in energy prices, and the necessity of reducing greenhouse gas emissions, as well as the goal of securing the energy based on the goal of a wide mix of energies, some people advocate extending the operating lives of existing nuclear power plants, others point out the residual risks of using nuclear energy and the question of long-term safe storage of spent nuclear fuel rods, and therefore advocate retaining the regulations in the 'Atomic Energy Act', which were agreed on the basis of the nuclear power consensus. The coalition agreement has therefore established that because of the wide difference of opinions, a change in the existing regulations is not possible in this legislative period.

It is true overall that the generation of electricity must be carried out efficiently; not only equipment which uses electricity but also the power stations that produce it must be as economical as possible. Making the stock of nuclear power plants more efficient is therefore an important measure towards increasing efficiency. This should also include replacing old coal-fired power plants with new ones. New power plants should wherever possible be built as CHP plants, as in this way their fuel utilisation can be maximised by up to 90%. But even the replacement of an old power plant with an efficiency level of around 30% by a new with one of around 50% saves 40% of the emissions per kilowatt-hour that are released. Therefore, new coal-fired power plants can contribute to the protection of the climate when they replace old, inefficient ones.

In the medium term 'carbon capture and storage' (CCS) technology can contribute to the reduction of greenhouse gas emissions from power plants, if the appropriate installations function on an industrial scale and safe repositories with sufficient capacities are available. For this reason the Federal Government supports research and development in this area. Two to three of the pilot installations planned in the EU are scheduled to be built in Germany.

Renewable energies:

Renewable energies are the second pillar of sustainable energy management alongside energy efficiency. They prevent greenhouse gas emissions and are either virtually inexhaustible worldwide or regenerate themselves within a manageable period. They are indispensable both for reasons of climate protection and in terms of assuring the energy supply. In view of the increasing use of agricultural raw materials in the area of bioenergy, competition for use especially of scarce natural resources and with food production must be borne in mind, together with the need for sustainable production.

Compliance with the demands of sustainable energy use of biomass for the production of electricity and heat, and for providing fuels, will in the future be a prerequisite for recognising bioenergy in the context of the payment regulations

contained in the 'Renewable Energy Sources Act', the fulfilment of duties of the 'Renewable Energies Heat Act', and the regulatory (quotas) and tax support of biofuels. The legal basis for this has already been created. The sustainability criteria for bioenergy will be specified in the context of an EU directive and can then be incorporated quickly into national law.

In Germany today about two-thirds of the renewable energies in energy consumption come from bioenergy. Bioenergy will also remain the most important source of renewable energy in Germany in the foreseeable future. In order to reduce the competition between the use of biomass for producing energy or producing raw materials, the percentage of biogenic residual and waste materials is to be increased. The new version of the 'Renewable Energy Sources Act' passed by the German Bundestag on 6th June 2008 has already set the course for the increased use of biowaste, and also of straw and liquid manure.

Measures

'Renewable Energy Sources Act'
The Federal Government's goal is to increase the proportion of renewable energy in the electricity sector from the current 14.2% to at least 30% in 2020 and afterwards to continually increase it. The amended version of the 'Renewable Energy Sources Act' (2009) signed off by the German Bundestag on 6th June 2008 serves this goal.

'Renewable Energies Heat Act'
Renewable energies in the heating sector offer great potential for protecting the climate and for conserving fossil fuels. For this reason the percentage of renewable energies in final energy consumption for heating is scheduled to increase to 14% by 2020. In this context an obligation to use renewable energy in the construction of new buildings forms part of the new Heat Act. In addition, support for the use of renewable energies for heating in existing buildings will be increased between 2009 and 2012 to up to 500 million euros per year. The 'Renewable Energies Heat Act' was passed on 6th June 2008.

Biogas feed-in
In order to facilitate the feed-in of biogas into the public natural gas grids, the existing legal context has been made more concrete and improved. The existing legal regulations, for example the regulation on access to gas networks, have been adapted in order to make the feed-in of biogas into the public natural gas network easier and economically more attractive. The new version of the 'Renewable Energy Sources Act' and the current funding guidelines of the market incentive programme support the feed-in of biogas into the natural gas grids by means of appropriate regulations.

Enlargement of the grid
A draft law passed by the Federal Cabinet is designed to speed up the expansion of the high-voltage electricity grid. An important element of the legal package is a law on the expansion of the power grid. The package of legislation will create an acceleration of the planning and approval procedures for twenty-four urgent high-voltage transmission lines. The 'Power Grid Enlargement Act' enables underground cables to be laid in the context of four pilot projects on technologically and economically efficient segments. For the connecting links to the offshore wind energy installations, a procedure for planning approval is being introduced which replaces the existing individual approval procedures. The new law additionally makes it possible to implement pilot projects which will test the technology of the high-voltage direct current grid. The costs of this can be passed on to be included in the network charges provided the scheme is necessary for an efficient and economically sensible network operation and provided the costs are economically justifiable in comparison to a corresponding extension of the alternating current network.

Biofuels
In order to contribute to achieving the energy and climate policy goals of the Federal Government, the further development of biofuels will be directed more strongly than previously towards reducing greenhouse gas emissions and taking account of various sustainability factors.

Innovation:

The energy and climate package establishes important modernisation incentives in the area of energy and climate protection technology in which Germany is already a worldwide market leader. These will pay off through higher production and employment figures, a high proportion of added value domestically and continual new production innovations in these areas.

Research and innovation
In the field of research the Federal Government will be launching new initiatives, amongst others with a focus on climate protection, energy efficiency, renewable energies and CO_2 storage as well as in the area of applied research. In this way the technology leadership enjoyed by German companies on world markets will be further developed. The spectrum of activities includes both fundamental and applied research.

Support measures from the Federal budget
The integrated energy and climate policy is also reflected in the Federal budget. Thus for the fiscal year 2008 altogether around 3.3 billion euros is available (including up to 400 million euros from the sale of emissions certificates, as well as about 700 million euros from bilateral and multilateral development cooperation). In terms of total public spending, this represents 1.8 billion euros more than in the budget for 2005. In the coming fiscal years from 2009 onwards, the expansion of an efficient energy and climate policy must continue to be in line with the Federal Government's consolidation goals, the financial plans up to 2011 which have already been signed off and the necessary further reduction of Federal Government borrowing.

Measures in the transport sector:

The transport sector can also make an important contribution to meeting the future challenges of energy and climate policies. Following a suggestion by the EU, Germany plans to reduce its greenhouse gas emissions by 14% between 2005 and 2020 in the context of its commitment to reductions in the area

not covered by emissions trading. In order to achieve the required CO_2 reductions, additional efforts are needed in the transport sector. Important measures have been set up through the Energy and Climate Programme as well as in the Federal Government's new Transport Research Programme:

Measures

Switching motor vehicle tax to a CO_2 basis
Tax on motor vehicles is being amended on a revenue-neutral basis. For new vehicles from 2010 tax will be oriented towards the vehicles' emissions of CO_2 and other pollutants. The Federal Government has approved central parameters for this tax.

Energy labelling for cars
In order to increase the incentives for purchasing cars with better fuel consumption and reduced CO_2 emissions, a consumer-friendly and easily readable label has been introduced. The draft of an appropriate national regulation has been developed. If necessary, it will be adjusted to the EU regulation which has been announced but is not yet in force.

Improved steering effect of HGV toll
The Federal Government amended the toll level regulations by means of a Cabinet resolution on 18th June 2008. Under this regulation, lower-emission heavy goods vehicles will pay less in tolls in relative terms than vehicles with higher emissions. In addition, the level of the toll has been modified to reflect the increased costs of transport infrastructures based on the 2007 expert assessment of ground freight transport costs.

Additional measures:

Reduction in emissions of fluorinated greenhouse gases ('Chemicals Climate Protection Ordinance')

The Federal Government has passed an ordinance which will reduce the emissions of fluorinated greenhouse gas from mobile and stationary cooling installations.

Monitoring

The Federal Government renders accounts of how far it has achieved its goals and the effects of the measures which have been resolved upon. For this reason the departments which are involved in the implementation of the Integrated Energy and Climate Programme will present a report in November 2010 and thereafter every two years to the Federal Cabinet, describing the effects of the Integrated Energy and Climate Programme overall and the specific measures involved in particular. The achievement of goals in the respective areas and their cost efficiency in particular will be shown. The basis of the report will be the results of assessments by independent experts which have been authorised by the Federal Government. If it should turn out that the current measures are insufficient or not cost effective, the Federal Government will augment the existing policies accordingly, change them or, if necessary, suggest and implement new measures.

b) Emissions trading in the second trading period

The emission trading system (see also Chapter D.IX.) contributes to reducing emissions of the greenhouse gas CO_2 where the reduction is the most cost effective. However, the current system can still be improved, for example by harmonising the regulations on a European level.

If a company participating in emissions trading achieves the required emissions reductions through its own cost-effective CO_2 reductions measures, it can sell its unneeded certificates on the market. If the opposite is the case, it must purchase certificates on the market. If the company neither fulfils its reduction goals through its own reduction measures nor through purchase of certificates, sanctions will fall due which in the second trading period amount to 100 euros per tonne of carbon dioxide. The unmet reduction obligations must, nevertheless, be met in the following year.

In the second trading period (2008–2012) in Germany the total allocation will be reduced by 57 million tonnes of CO_2 compared to the first trading period, which means that the annual allocation for the emissions trading sector will be limited to 452 million tonnes of CO_2. This also includes the allocation for installations which have been newly accepted into the trading market as of 2008. These are primarily installations in the chemical industry, subsequent processing facilities in the steel industry and carbon black manufacturing facilities. Together these installations emit about 10 million tonnes of CO_2 per year. In comparison to the current emissions level of the installations registered on the current emissions trading market (2006: 477.3 million tonnes of CO_2), the allocation amount for 2008–2012 will be decreased by more than 7%.

On 23rd January 2008 the European Commission published proposals for a comprehensive energy and climate protection package. The goal of the package is to reduce greenhouse gas emissions in Europe. The suggestions should enable the European Union to reduce greenhouse gas emissions by at least 20% by 2020 and increase the proportion of renewable energy sources in total energy consumption to 20%.

For the emissions trading system, the draft proposes an EU-wide cap and a linear reduction pathway of 1.74% per year until 2025. Additionally,

trading in the future will include additional greenhouse gases. The Federal Government supports the creation of uniform statutory conditions for all member states as an important contribution to functional emissions trading and to preventing the distortion of competition. In terms of auctioning, the differential treatment of electricity generation and the production industry is welcomed. Germany will be actively engaged in reaching an agreement on the energy and climate package presented by the Commission before the end of 2008 and approving it at the latest at the beginning of 2009—before the elections for the new European Parliament in June 2009 and as a signal to the UN Climate Change Conference in Copenhagen in December 2009

c) Renewable energies—expanding a sustainable energy supply

In spring 2007 the European Council passed ambitious and binding goals for the European-wide development of renewable energies. The proposed directive of the EU Commission of January 2008 proposes for Germany that in 2020 a proportion of 18% of end energy consumption should be renewable energies:

Goals in the area of renewable energies

(corresponding to the Integrated Energy and Climate Programme of 5th December 2007 as adopted by the German Bundestag on 6th June 2008)

- Increase in the proportion of renewable energies in electricity production to at least 30% by 2020 and subsequently a continuous increase
- Increase in the proportion of renewable energies in heating consumption to 14% in 2020

The 'Renewable Energy Sources Act' *(EEG)*

In just a few years a highly dynamic industry has developed in the field of renewable energies. The total turnover in renewable energies in 2007 was around 25 billion euros, of which around 11 billion euros derived from the construction of installations and around 14 billion euros from operating them. In the future, exports will assume an increasing importance. In the wind energy industry the export quota in 2006 already amounted to about 70%, in photovoltaic technology to about 30%. Altogether in 2007 the number of employees in these sectors increased to about 250,000, an increase of about 90,000 jobs in comparison to 2004. The central instrument for achieving these goals in the electricity industry has been the German 'Renewable Energy Sources Act'. The business planning reliability needed for making the necessary investment decisions was made possible through fixed feed-in payments for electricity derived from hydraulic power, wind energy, solar energy, biomass and geothermal energies, which are oriented around the costs of electricity generation and the competitiveness gap of the individual technologies. By staggering the fee scales over time, an incentive stimulus for innovations aimed at cost reduction has been provided. In the meantime eighteen EU member states use a similar feed-in system for the promotion of renewable energies in the production of electricity, and around forty countries worldwide. According to a document from the EU Commission of January 2008, are 'well adapted feed-in tariff regimes ... generally the most efficient and effective support schemes for promoting renewable electricity'. In the context of its energy and climate package, on 5th December 2007 the German Federal Government presented an amended and improved 'Renewable Energy Sources Act'. The new version of the 'Renewable Energy Sources Act' was passed by the German Bundestag on 6th June 2008 and will come into force on 1st January 2009.

Heating

In the heating sector the use of renewable energy has up to now been promoted primarily by means of the market incentive programme. Approximately 788,000 projects were funded between the beginning of the programme in 2000 and the end of 2007 to the tune of 965 million euros, and an investment volume of 8.2 billion euros has been generated. In the context of the energy and climate package the German Bundestag passed the 'Renewable Energies Heat Act' on 6th June 2008 on the basis of a draft prepared by the Federal Government. This establishes in particular requirements for the use of renewable energies in the construction of new buildings. After the law comes into force, owners of newly constructed buildings must use renewable energies proportionately to cover their heating energy needs. The use of renewable energies for heat production will be funded by up to 500 million euros a year according to needs between 2009 and 2012. The large potential of renewable energies in the heating area will thus be exploited with the twin pillars of requirement and support.

Performances of renewable energies

In 2007 in Germany the emission of about 115 million tonnes of CO_2 was prevented through the use of renewable energies.

Performance of renewable energies taken individually

- Around 68% of the total final energy was provided from renewable energy sources through the use of **biomass**.
- In terms of heat generation from renewable energy sources, biomass (chiefly wood) comprised a 93% share. The stock of wood heating has once again increased. The highest share in this context is the use of split logs, the demand for which has markedly increased. But the number of **pellet heating** installations also increased, in 2007 to 83,000. At the same time about 4.6 million tonnes of **biofuels** were used. Altogether in 2007 more than twenty-three terawatt hours (TWh) of electricity was produced from the total biomass.
- **Wind energy** made its greatest contribution in the area of electricity in 2007. Following a net increase of 1,667 megawatts (MW), by the end of 2007 a total of 22,247 MW was installed, with which 39.5 TWh of electricity was produced, or just under 50% of the total amount of electricity generation from renewable energies. The share of wind energy in the gross consumption of electricity was around 6.4%.
- Electricity output from **hydroelectric power** in 2007 was 20.7 TWh, equivalent to 2006 (20.0 TWh).
- In 2007 the share of **photovoltaic technology** in the total production of electricity was altogether around 0.6%, and about 1.6% of renewable energies The increase in the area of solar collectors in 2007 was almost 1 million square metres, which increased the total area of solar collectors in Germany to over 9.5 million square metres.
- In 2006 the first **geothermal power plant** in Germany for year-round industrial use began production. There are currently about 150 geothermal projects for heat utilization or electricity generation in preparation in Germany.

Note: All the figures on the development of renewable energy for 2007, the volumes produced and the employment figures are based among other things on the information provided by the *Arbeitsgruppe Erneuerbare Energien-Statistik (AGEE-Stat)* ('Working Group on Renewable Energy-Statistics') and the publication from the BMU ('Federal Ministry of the Environment, Nature Conservation and Nuclear Safety') *Erneuerbare Energien in Zahlen – nationale und internationale Entwicklung* ('Renewable Energies in Figures—National and International Development'), of June 2008.

d) Climate protection and transport

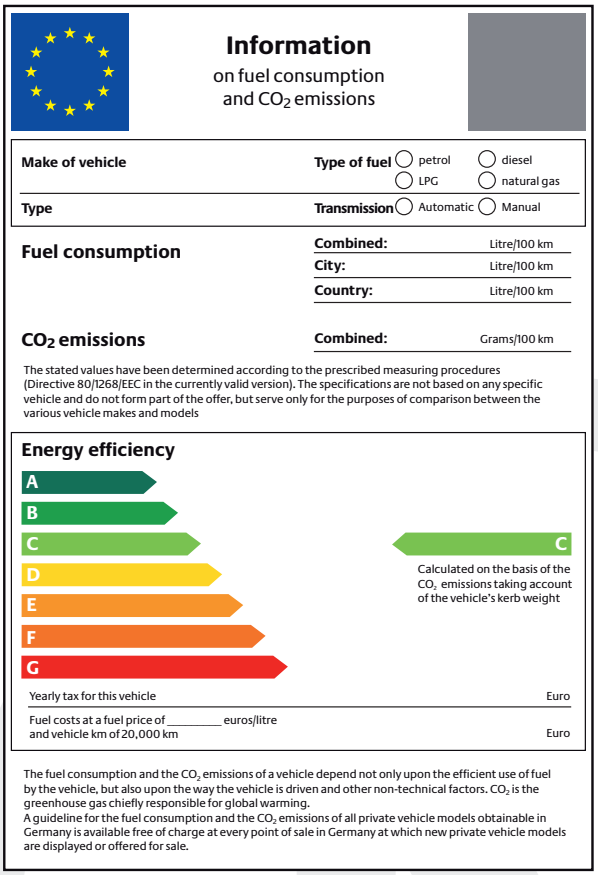
Transport in Germany at present contributes about 20% of anthropogenic emissions of greenhouse gases. In view of the increasing transport intensity—especially in road goods transport and air transport—it is especially important nonetheless to find ways of reducing greenhouse gas emissions.

Private vehicle traffic

CO_2 emissions in vehicle traffic have to be reduced. To this end, it has been agreed at EU level that the goal of reducing specific emissions of currently 160 g CO_2/km to 120 g CO_2/km on average for all European new vehicles should be achieved by 2012. The Commission's proposal for the technical measures intended to reduce the average to 130 g CO_2/km has been in existence since 19th December 2007. Proposals for the remaining 10 g CO_2/km are to be submitted in 2008. The discussions in the EU Council have begun.

The reduction of the CO_2 emissions from road vehicles also represents a decisive strategic task for the Federal Government. Thus the introduction of a CO_2 rating in the vehicle tax for private cars is intended to create an incentive for low consumption vehicles. The latest central benchmarks resolved by the Federal Cabinet on 18th June 2008 specify that once the responsibility for the revenue derived from the vehicle tax has passed from the *Länder* to the Federal Government, all passenger vehicles coming into circulation after 1st January 2010 will be switched to a taxation system based upon emissions of pollutants and CO_2. In the medium term, it is aspired to achieve revenue neutrality as far as possible.

Specimen of the planned label



In order to increase the demand for economical vehicles low in CO_2 emissions, a consumer-friendly and readable label will be introduced. The Federal Government plans to change the vehicle energy consumption labelling regulation to CO_2 vehicle

labelling, and thus structure it more efficiently. According to the Meseberg resolutions there are to be seven efficiency classes (A to G) depending on the specific emissions in relation to the mass of the vehicle. The draft of a corresponding national regulation has already been developed. If necessary this will be aligned with the EU regulation which has been announced but is not yet available. Overall this is expected to clearly invigorate the marketing of CO_2 efficient vehicles.

HGV traffic

In 2005 road goods transport was responsible for 4.3% of national greenhouse gas emissions and thus showed strong growth. Approximately 70% of the tonne kilometres travelled in Germany are today attributable to heavy goods vehicles.

Since 1st January 2005, a toll *(Maut)* has been levied on German highways for HGV of a total permissible weight of 12 tonnes and above. The reallocation of the operating costs of road transport according to the 'polluter pays' principle supports the efforts of German transport policy to shift transports to the railways. The introduction of the toll has contributed to more efficient use; that is, the percentage of empty trips has gone down slightly. At the same time the sliding scale according to classes of pollutants has served as a stimulus to the purchase of low-pollutant vehicles.

In order to develop an even stronger effect in terms of climate protection, an increase in the toll is being planned. The proposal is for a greater spread and differentiation of the toll rates according to emissions classes of 100% instead of the 50% up to now. In this way lower-pollutant vehicles can be further relieved of the toll burden and higher-pollutant vehicles taxed more heavily. A corresponding draft for an amendment to the toll regulations was passed by the Federal Cabinet in June 2008. The Expert Report on Operating Costs in 2007 (an update of the Expert Report on Operating Costs in 2002) was taken into consideration when passing the resolution on the regulation.

***Biokraftstoffquotengesetz* ('Biofuels Quota Act')**

The proportion of biofuels is to be increased and from 2015 will be more geared towards the reduction of greenhouse gas emissions than previously. The Federal Government will decide upon the further steps in the context of a review of the strategy for the use of bioenergy. A sustainability regulation is intended to guarantee that in the production of biomass, certain demonstrably determined ecological and social requirements for sustainable production and minimum standards for sustainable cultivation of agricultural areas and the protection of natural habitats are fulfilled. Additionally biofuels must demonstrate a definite potential to reduce greenhouse gas emissions.

A change in the 'Federal Immission Control Act' will provide the regulation to ensure that from 2015 and in subsequent years the share of biofuels that is to be placed in circulation by the undertaking party will provide an increasing net contribution to climate protection. This means that it will no longer be important how much biofuels are added, but rather the amount of CO_2 emissions which will be prevented. This is important since even the production of biofuels leads to varying amounts of CO_2 emissions.

The Federal Government is firmly adhering to the measures adopted in the area of biofuels as a matter of principle. This does not however rule out examining and possibly fine-tuning the total measures and the package of goals. In this sense a possible reduction in the biofuels goals in force up to now is currently under discussion.

Electromobility

Efficient vehicles and drive technologies are a key element in unlocking further potential for CO_2 reductions in the transport sector and at the same time in reducing dependency on energy imports. Over the medium and long term, electrically powered vehicles offer the greatest potential in this context. Through the use of electrical energy the number of applicable primary energies can be clearly increased, so that access to the whole spectrum of renewable energies becomes possible. Moreover, vehicles with electric drive technology cause no pollutant emissions at the place of operation and generate less noise pollution.

The battery in electric vehicles can also make an important contribution to improving network management. This would above all simplify the regulation of the stability of the network where there is a growing proportion of fluctuating electricity from renewable energies, and at the same time make the efficiency reserves usable.

In order to reach the ambitious goals set by the Federal Government in the area of energy and climate policy, it is necessary for the additional requirements for electrical energy in this sector to be covered by electricity from renewable energies.

Against this background the Federal Government has set itself the goal of further developing the fuel strategy in this area. It also wants to concentrate and increase its efforts on the topic of electromobility in order to strengthen Germany's international competitiveness in this technology of the future, speed up market development and, similarly to Japan and the USA for example, enable long-term and coordinated support for research and development in this area.

In addition the Federal Government has already tackled research activities in support of hybrid technology with the goal of further developing the core components of the hybrid drive train as well as the application-oriented development and integration of new functional modules.

Air transport

Worldwide and in Germany air transport is the most rapidly growing means of transport, with a projected traffic performance growth rate of 4–5% a year in the next two decades. This growth carries with it a progressive increase in emissions, which also can not be completely absorbed by technical improvements. For this reason, increasing air transport contributes to the impairment of air quality through the emission of nitrogen oxides, particles, hydrocarbons and greenhouse gas emissions.

Until now no progress could be made at international level in limiting air transport emissions which adversely affect the climate. For this reason in 2006 the EU Commission suggested including air transport in the EU emissions trading system without this impacting on competitiveness. According to the draft directive adopted on 8th July 2008, as from 2012 air transport will take part in emissions trading: 15% of the emissions rights will be auctioned, and the remainder will be distributed free of cost initially. Independently of these measures, on the international level of the framework convention on climate change and the International Civil Aviation Organisation (ICAO), efforts must be undertaken to contribute to limiting these greenhouse gas emissions.

Shipping transport

Shipping is an integral component of the global exchange of goods. Because of the increasing international interdependencies in terms of trade, the amount of goods transported on the water is steadily increasing by 1% to 2% annually. While in the past climate protection hardly played a role in the area of water transport, this theme is now increasingly moving to the forefront as today ships already cause some 3% of worldwide CO_2 emissions. Extensive research is currently being undertaken to answer the question of what additional climate effects shipping emissions might have, for example, through the emission of nitrogen oxides and the resulting build up of the ozone layer several kilometres high. In 1997 the international community of states in support of the Kyoto Protocol was unable to agree on reduction goals for this means of transport. Despite the basically sound energy efficiency of sea transport per transported tonne, sea transport as an industry also possesses the potential to reduce emissions. The UN special organisation responsible, the International Maritime Organization (IMO), was mandated to devise measures. The necessary work has begun. In the future, efforts in this area will be further increased.

In respect of emissions from maritime vessels, the Federal Government has been able to make considerable progress on an international level. On 10th October 2008 the Marine Environment Protection Committee (MEPC) of the IMO passed a resolution on the tightening of regulations on emissions in maritime transport. Thus from 2015 ships on the North Sea and the Baltic Sea must be propelled only by distillate fuels; worldwide this regulation applies from 2020. Moreover, as many as possible further Sulphur Emission Control Areas (SECAs), such as the North Sea and the Baltic, must be designated. From 2011 nitrogen oxide must be reduced by 20% in comparison to today's levels, and in designated control areas by as much as 80% from 2015.

Climate neutral business travel project

Active climate protection requires the participation of all groups in society. The Federal Government and public institutions at the national, *Land* and municipal levels can and must also contribute. Thus as part of the further development of the Sustainability Strategy, the Federal Government has launched a concrete sustainable

development project in the area of climate protection relating to its own administrative activities by means of a Cabinet resolution on 28th February 2007. This project will place the business trips of members of the Federal Government on a climate-neutral basis beginning in 2007. The Federal Government hopes that this example will be followed by other State institutions and also in the business and social sectors.

Under this project, every year the greenhouse gas emissions caused by all of the business travel by members and employees of the Federal Government will be retrospectively compensated, provided this travel has been undertaken using official cars or by air. 'Business flights' also include flights by members of the Federal Government with the flight service of the German Air Force. The compensation will take effect when the amount of CO_2 emissions caused by official trips is balanced out by additional climate protection projects. From the CO_2 emissions that are prevented by these projects, emissions credit vouchers will be issued which will be used for climate neutralisation.

The basis is a collection of data every three years in respect of official flights and the amount of fuel used by the official vehicles in the various departments. Rail travel will not be taken into consideration due to its environmental advantages and also due to the fact that the power plants which supply electricity to the German railways are included via emissions trading. The Cabinet resolution applies to the ministries, the Federal Chancellor's office, the office of the President of the Federal Republic and the Press and Information Office of the Federal Government.

Compensation projects

Basically, only those projects which satisfy the criteria of the Kyoto Protocol are eligible for compensation for greenhouse gases emitted on business travel. For this reason a compensation project must conform not only to the criterion of 'additionally'—that is, that only projects which are implemented exclusively for compensatory purposes are accepted—but must also fulfil the criterion of supporting sustainable development in the country in which the project occurs.

This is of great importance especially in the implementation of projects in emerging and developing countries with the goals of fighting poverty and increasing sustainable economic development. Support for those projects which involve increasing energy efficiency or developing renewable energies is especially desired. In specific cases this could also include some domestic projects.

These are all important impulses and steps towards an active 'climate consciousness' and a stronger awareness of the extent to which each individual causes greenhouse gas emissions. The Federal Government hopes that the project will also serve as an example for the private sector.

Nevertheless, the best active climate protection is offered by preventing greenhouse gas emissions. For this reason concrete measures for increasing efficiency in the transport sector are to be preferred to retroactive compensation. Departments will therefore examine for their own area to what extent this factor can be taken into account in terms of business travel, but also by avoiding business travel. This includes in particular increased use of the option of telephone and video conferences, in order to keep the effects of the current physical distances between the offices of the departments as low as possible.

e) Climate protection achievements of the waste industry

The waste industry has made important contributions in the last few years to the reduction of greenhouse gas emissions in Germany. Between 1990 and 2004 greenhouse gas emissions fell from over 40 million tonnes to around 10 million tonnes per year. The complete implementation of the *Abfallablagerungsverordnung* ('Ordinance on Environmentally Compatible Storage of Waste from Human Settlements and on Biological Waste-Treatment Facilities') saved more than 20 million tonnes of CO_2 equivalents annually up to 2005 in the area of household waste alone, as a result of the prohibition of waste dumps for biologically degradable waste. By 2012 this will amount to more than 30 million tonnes. Moreover, additional saving effects will result from the production of energy from domestic waste and those components of waste which have a high heating value.

f) International financing contributions

The Federal Government is also active on an international level and in the context of the bilateral and multilateral cooperation with developing countries for climate protection and a sustainable energy supply. For this purpose more than 1 billion euros will be spent in 2008. Of this amount, 600 million euros are intended for bilateral measures in partner countries. These include projects in the areas of:

- Protection of tropical forests,
- Renewable energies and energy efficiency,

- New climate protection initiative for industry, cities and mobility, as well as
- Adaptation to climate change, especially in the areas of water resource management and water supply.

82 million euros are intended for multilateral programmes, chiefly in the context of the Global Environment Facility (GEF) and the climate funds located there, as well as the Montreal Protocol for the protection of the ozone layer.

In a number of bilateral undertakings, credits from financial cooperation which are refinanced from budget funds are being topped up by resources from the capital markets. In this way the development benefit will be increased by at least 200 million euros (estimated). Within the total, the developmentally relevant amounts in the climate sector amount to more than 880 million euros for 2008.

In addition, for 2008 120 million euros are available from the revenues from auctioning the emissions rights for the international climate protection initiative, which will strictly be used in accordance with development policy measures. The Federal Government intends to use this initiative to give a new impulse to climate protection on an international level, and to react to the enormous need for financing for international climate protection. The following areas in selected transition countries and developing countries will be supported:

- Investments in structural change for a sustainable energy supply and
- Adaptation to the climate change and the protection of natural habitats.

Over and above this, the Federal Government intends to participate in the new Climate Investment Funds (CIF) of the World Bank with 300 million euros.

Energy support in international cooperation

In 2004 the Federal Government doubled its support pledges for renewable energies and energy efficiency to 400 million euros annually. The next leap took place in 2008. On average this support is equally divided between renewable energies and energy efficiency. At present energy projects are supported in around fifty partner countries. Intensive cooperation is underway in the energy sector in over twenty-five countries.

Activities

'renewables 2004'
With the international conference **'renewables 2004'** in Bonn, the Federal Government provided a strong and important impulse for the worldwide expansion of renewable energies. At the beginning of March 2008, following the Beijing conference in 2005, the second follow-up conference took place in Washington. In this way the Bonn renewables conference established itself as a process. As in Bonn, in Washington too an action programme was to be compiled from the goals and promises made by the participating states. Germany introduced, amongst other things, the corresponding goals and measures of the Integrated Energy and Climate Programme.
The Federal Government is cooperating closely with the **Renewable Energy Policy Network for the 21st Century (REN21)**. Here governments, international organisations and representatives from civil society are working together for worldwide support for renewable energies. An important contribution of the REN21 network is the annual publication of a global status report. This provides a comprehensive summary of the established support policies, markets and investments and the jobs associated with them.

IRENA
According to the Coalition Agreement of 2005 the government parties set themselves the goal of initiating the establishment of an **International Renewable Energy Agency (IRENA)**. The initiative is supported by many states. The preparatory conference alone, which took place in April 2008 in the German Foreign Office in Berlin, involved 170 participants from sixty countries. At the beginning of 2009 the Federal Government will invite all the interested countries to the founding conference of IRENA in Bonn. The chief goals of IRENA will be the advising governments, an exchange of information, scientific cooperation, the elaboration of quality standards and education and further training.

GEEREF
The establishment of a **Global Energy Efficiency and Renewable Energy Fund (GEEREF)** aims at providing private investment capital for developing and emerging countries in order to speed up the development, transfer and use of environmentally-friendly technologies for sustainable development.

This equity capital fund and an agreement on reassignment will enable start-up financing for introducing renewable energies and energy-efficiency technologies to the market to be provided in the respective regions.

The European Commission will make a total of 80 million euros available over the next four years as risk capital for financing private economic investments. Germany will contribute 24 million euros in all by 2010. Norway has pledged 8 million euros, and other EU member states such as the Netherlands, Italy and Great Britain are also considering taking part.

Methane to markets initiative
The methane to markets initiative champions the worldwide exchange of experience and knowledge in order to avoid methane emissions. The focus is on the exchange of experience for the efficient use of methane for energy purposes as well as the avoidance of unnecessary emissions and leakage. The initiative is active in all methane-emitting sectors, such as energy sources. Germany is a member of this initiative and above all supports participation by companies. The emissions credits from projects within the flexible mechanisms of the Kyoto Protocol Clean Development

Mechanism and Joint Implementation can provide an additional financial incentive for many investments in these sectors.

Sustainable solutions in the dialogue with emerging countries
New alliances, especially with the large emerging countries, but also within the trans-Atlantic and trans-Pacific dialogues, are the prerequisite for being able to offer and implement innovative and appropriate solutions for climate protection worldwide. The Federal Government is involved in **dialogues on research policy** with important groups of emerging countries which are currently considered to have the best chances of above-average economic growth. Since March 2007 strategic partnerships with these countries have been undergoing preparation. Between 2008 and 2009 a series of international conferences will take place which will set the dialogue in a broad political, economic and social context, and document the leading role occupied by Germany internationally.

4. Major stakeholders in climate protection and in the change in the supply and consumption of energy

Science

Innovative technologies by means of which energy can be provided sustainably and consumed more efficiently make the transition to a sustainable energy supply easier, and provide an important contribution to the campaign against climate change. At the same time they also open new opportunities for export—and thereby new opportunities for growth and employment. The prerequisites for innovative technologies are increased efforts in research, development and demonstration. Science thus has a central role to play in climate protection and in the change in the supply and consumption of energy.

The Federal Government supports science in its efforts to develop new innovative technologies, above all through its Energy Research Programme and High-Tech Strategy for Climate Protection (for more details, see Chapter D.VII.). Support for research significantly contributes to the fact that on an international comparison German companies and research institutions occupy a leading position in the area of renewable energies and energy efficiency. German power station technologies are at the forefront internationally and ensure manufacturers a considerable share of the strongly growing world market. German businesses are also in the lead worldwide in many areas of renewable energies and efficiency technologies. For example, the core components for the solar thermal power plant technology which is booming worldwide come from Germany. The geothermal power stations in Landau (Rhineland Palatinate) and Unterhaching (near Munich), which are also funded by the Federal Government, are responsible for the breakthrough in geothermal power production in Germany.

Companies and climate protection

Companies must contribute to the worldwide protection of the climate, and require a long-term, reliable statutory framework for this. The goals of climate protection must take account of the fact that companies in Germany and Europe are in competition with companies from countries which up to now have not pursued any climate protection policy, or a less ambitious one. Climate protection policy must therefore not lose sight of Germany's competitiveness as an economic location.

Municipalities

The commitment of municipalities contributes to a successful climate protection strategy to a particular extent. Municipalities and local public enterprises can assume an important pilot function by means of specific projects, such as in the areas of buildings, energy supply and transport, and with initiatives targeted at other players (for example, business and private individuals) can provide impulses for a large variety of climate protection activities.

Consumers

Consumers can make a substantial contribution to climate protection by means of their individual consumption habits (see Chapter D.II.). A prerequisite for this is that they are aware of the relevance of their consumer decisions for the climate, and that alternatives for action which are more beneficial for the climate are available to them. Alongside the consumption of energy for heating and the supply of hot water, the chief factors presently contributing to the CO_2 balance of 10.4 tonnes per head per year include mobility and private consumption. In recent years so-called CO_2 calculators have been developed, which everyone can use to calculate their own private CO_2 balance. Various approaches to devising a CO_2 label for consumer goods are in the test phase. The Federal Government is working on developing and making available a uniform method of calculation and comparable communication instruments. Today a whole series of labels already provide information on the climate relevance of products. These include 'The

Blue Angel', which is currently being more strongly focused on climate aspects.

The Federal Government attaches great importance to information for consumers about climate-friendly consumer behaviour in all areas of life.

5. Counteracting the climate changes already taking place in good time

a) German adaptation strategy in an international context

In 2007 the fourth Progress Report of the Intergovernmental Panel on Climate Change (IPCC) makes clear that climate change is already taking place and that mankind must adapt to the effects, which are no longer avoidable. It is probable that the consequences of climate change will be most strongly felt by those developing countries which have neither the financial nor the technical capacity to protect themselves sufficiently. These countries are dependent upon our support in order to maintain their chances of reducing poverty and developing economically. But industrial countries too must take precautions to adapt to the consequences of climate change and ensure the adverse effects remain as low as possible both economically and socially.

The need to take measures to adapt to climate change was recorded contractually on an international level back in the 1990s. The 1992 United Nations Framework Convention on Climate Change (Article 4b, e) and the Kyoto Protocol in 1997 (Article 10b) both contain an obligation to put together national plans for adaptation. At the twelfth session of the Conference of the Parties to the Climate Change Convention in Nairobi in November 2006, the Parties signed off the 'Nairobi Work Programme on Impacts, Vulnerability and Adaptation to Climate Change' (NWP), which was intended to contribute to identifying regional effects of climate change, recognising deficits in knowledge and developing technical solutions for adaptation measures.

At a European level too the subject of adaptation has found its way into the formulation of political goals and was integrated into the updating of the European Climate Change Programme (ECCP II). In June 2007 the EU Commission published a green paper on adaptation to climate change in Europe, which describes the first guidelines for future development and implementation of measures at a European level. The EU Commission is also planning by the end of 2008 to make the proposals contained in the green paper more specific, and finally to publish them in a white book on adaptation.

b) Mandate and goal of a German adaptation strategy

The German climate protection programme of 2005 provides for the 'development of a comprehensive national concept for adaptation to climate which takes into account the jurisdiction of the *Länder*'. In the resolution passed at the special conference of environment ministers in March 2007, the *Länder* emphasised the necessity of an appropriate national strategy and a coordinated regional strategy. In many areas the *Länder* are responsible for the creation and implementation of policy, for example in regional planning and land-use planning, the water industry, agriculture, forestry, or the protection of coastal areas and nature. Several *Länder*, for example, Hessen, Brandenburg, Baden-Württemberg, Thuringia, North Rhine-Westphalia, Saxony and Bavaria, have already identified regional consequences of climate change and are working on their own strategies for adapting to these climate consequences. The goal of the national adaptation strategy is a nation-wide framework to prevent climate-related risks for the population, along with economic and social damage. It will also make statements on Germany's contribution to the bilateral and multilateral cooperation for the development and implementation of adaptation measures in the regions of the world which are especially hard hit by climate changes, and particularly in developing countries.

c) Progress on the way to an adaptation strategy

In autumn 2008 a report on the adaptation strategy will be presented to the Federal Cabinet describing and evaluating the initial position, identifying gaps in knowledge, research needs and paramount spheres of activity, and containing proposals for additional courses of action.

The development of the scientific basis for adaptation measures is an important part of the High-Tech Strategy for Climate Protection. The research activities are intended to improve the quality of forecasting extreme weather events and their effects upon ecological systems, examine the interactions between sectoral and player-specific adaptation strategies and also develop approaches to the formulation of regional strategies. In this context both the national and the international perspectives will be considered.

Summary of possible fields of activity in the adaptation strategy
(This list is not comprehensive)

Area	Examples of possible effects of climate change
Health	Illness and injuries caused by heat waves, storms, flooding, avalanches or earth slides, together with changes in the area of incidence of vector-borne diseases (e.g. FSME, Lyme disease)
Agriculture	Adverse effects on harvests especially in dry areas in the east and south west of Germany, together with decreasing certainty of harvests through increasing weather extremes and increased climate variability
Forestry	Increased vulnerability of forests not adapted— or due to the climate change no longer adapted—to their location, together with increased danger of forest fire and increasing pressure through vermin and weather extremes
Fishery	Change in fish stocks and migrations
Water resource management	Increasing low water (summers), falling ground water table especially in eastern Germany, instability of supply
Flood protection	Increasing danger of flooding from inland water sources (winter/ spring) and from local high rainfall
Coastal protection	Increased danger of ocean flooding and coastal erosion due to accelerated rise in sea level and increasing number of storm tides, also increased risk in combination with simultaneous inland high water levels in tidal rivers
Nature conservation/biodiversity	Danger to species diversity especially in wetlands and mountainous regions, change in the species composition (see also indicator 'Species diversity and landscape quality' in Chapter B)
Transport/transport infrastructure	Adverse effect on air traffic through changed air flow conditions, and on inland water transport through more frequent high and low water conditions, the effects of heat on traffic infrastructures, damage to bituminous pavement
Tourism	Decrease in reliability of snow in mountainous regions together with increasing heat stress in southern holiday areas, possible improvement of northern holiday locations
Financial management	Higher direct costs for insurers and reinsurers in liability cases, together with indirect dependency upon currency exchange rates
Energy sector (production, transport, supply)	Adverse effect on cooling capacity of power plants through high and low water levels, and on power networks through ice, high winds and rain
Regional planning	Land use options or restrictions on land use under changing statutory conditions
Urban development and urban planning	Overheating and lack of ventilation in inner cities together with inadequate sewerage systems
Building industry/building technology	Increased thermal load in internal areas as a result of inadequate shielding of buildings against solar radiation and higher air temperatures
Architecture/architectural planning	Optimisation of planning processes (among other things building alignment, providing shade, avoidance of thermal overloading); testing and adaptation of technical regulations (sun protection; heat protection, wind impact, rainwater, etc.)
Catastrophe and population protection	Planning and precautions in respect of higher probability of catastrophes
International cooperation for climate protection and adaptation to climate effects; cooperative development work	German contribution to the 'Nairobi Work Programme on Impacts, Vulnerability and Adaptation to Climate Change' (NWP) together with support for the development and implementation of adaptation strategies; financing of projects for the improvement of adaptation capacities
Research	Climatic consequences, adaptation technologies, socio-economic aspects

6. Conclusion

Since 1990, it has been possible to reduce greenhouse gas emissions in Germany by more than 20%. Thus, we are on the right track to adhere to our climate protection obligations in the Kyoto period 2008—2012.

With its Integrated Energy and Climate Programme, the Federal Government has set the path for adherence to achieving the ambitious climate protection goals after 2012. At the European level under the German EU Presidency, groundbreaking climate protection goals for the year 2020 were agreed upon. It is possible to reach these goals if energy efficiency and the use of low-carbon technologies are clearly increased and renewable energies strengthened and expanded. The measures contained in the EU climate package will contribute to achieving these goals.

Germany and the EU will, thus, continue in their roles as the driving forces behind climate protection. On this basis, the Federal Government advocates the conclusion of a comprehensive and effective follow-up agreement to the Kyoto Protocol on an international level.

II. Steps towards a sustainable raw materials industry

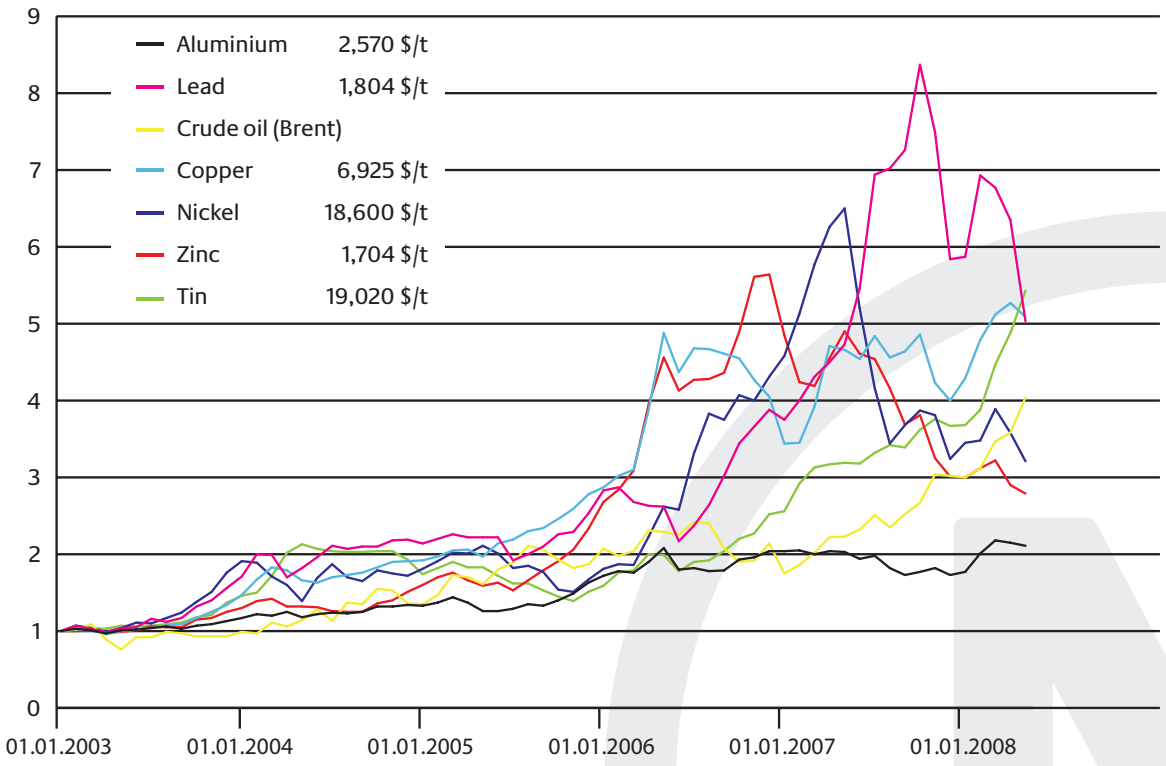
1. Strategy for a sustainable raw materials industry

The worldwide increasing demand for raw materials and the associated price increases force us to think about a raw materials industry that is oriented towards the principle of sustainable development. Over the past five years, prices for important industrial raw materials have, in part, more than doubled, and the costs of materials in Germany have increased by 10 billion euros. It is to be expected that raw materials will remain scarce as well as expensive in the globalised economy of the future.

The current boom in raw materials is characterised by the fact that not only 'traditional' industrial nations but also the emerging countries, such as India and China, have entered the world market as buyers in competition with the traditional import countries.

In view of the limited resources and their necessary sustainable use, the ecological and social challenges posed by the extraction of raw materials,

Price development of metals at the 'London Metal Exchange (LME)'



1 = 1st January 2003; 9th September 2008
Source: Federal Institute for Geosciences and Natural Resources *(BGR)*

and the securing of raw materials for the German economy, we require a long-term strategy for a sustainable raw materials industry. This follows from the necessity of economic precaution and is, at the same time, an act of justice—both concerning the relationship between North and South as well as concerning intergenerational equity. People in Central Europe use about ten times as many natural resources as, say, the people in Africa.

At the same time, a sustainable raw materials industry is a key element in a well-planned economic policy. Since only a limited amount of raw materials are available domestically, for example, coal, potash salt and rock salt, kaolin or quartz sand, the economy in Germany is dependent upon the recycling of raw materials, especially of metals, and upon imports.

On the world commodities market, the German buyers are under great competitive pressure. Simultaneously, elements that distort competition appear in international commodity trade. Often in developing countries, revenue from raw materials is not used for sustainable development within the country. For this reason, the Federal Government advocated approaching the topic of the raw materials industry in the broadest sense. It seeks an improvement of materials and resource efficiency, desires to ensure the supply of raw materials, and supports fair trade in the field of raw materials.

'It is not surprising that our economy is facing new challenges. The dynamic development will continue, for if the world economy grows by 5%, world trade increases by 9%, and the emerging countries record even stronger growth, it must be expected that this is a topic that we will continue to deal with in the years to come'.

Chancellor Dr Angela Merkel at the *BDI-Rohstoffkongress* (Raw Materials Congress of the Federation of German Industries—*BDI*), 20th March 2007

The increasing demand for energy and raw materials that is related to global population development and the surge in global industrialisation is linked with an increasing burden on the environment and its ecosystems. The consequences are, to name just a few, the destruction of rain forests, pollution of our water bodies, and additional greenhouse gas emissions. Thus, for the production, refining, and processing of raw materials and also for the commodities trade, there is a need for appropriate ecological and social standards. The indicator that is presently used measures only the absolute amount of raw materials, without distinguishing between the environmental effects of the individual raw materials. For this reason, the Federal Government is currently examining the degree to which a modified indicator can more accurately mirror the ecological and sustainable developmental effects of the production of individual raw materials. Research is also being conducted on this topic at international level, for example through the 'International Panel for Sustainable Resource Management' under the umbrella of United Nations Environment Programme.

The situation looks somewhat different with regard to wood and renewable agricultural resources. Germany disposes of the largest supply of wood in Europe (3.4 billion cubic metres) and shows a high annual increase (100 million cubic metres). This domestic resource can thus make a major contribution to the supply of raw materials. Renewable resources, however, not only contribute significantly to the preservation of fossil resources, but also to the protection of the climate and to economic development. Their ecological footprint is, therefore, as a rule much more favourable than those of fossil fuels and mineral raw materials. In view of the limited potential for the cultivation and exploitation of these renewable resources—but also with respect to their use—increasing their efficiency gains importance.

In view of the changing situation of the raw materials industry, the Federal Government established already in March of 2007 certain elements of a raw materials strategy that deal primarily with securing the supply of raw materials for the German economy. Raw materials supply remains, first and foremost, the task of the economy. It is the task of the State to create a suitable framework for a raw materials industry that is competitive on the international stage. This does not, however, release the State from advocating responsible use of raw materials and greater transparency in the raw materials sector, as the G8 countries did at the initiative of Germany during the summit declaration at Heiligendamm and later reinforced at the Tokyo summit.

One element of the strategy is to promote innovation, since development of technologies for the sustainable use of resources makes an important contribution to growth and employment. It is, therefore, seen within the context of the Lisbon Strategy of the EU as an area offering great innovation and export potential. Within the framework of the High-Tech Strategy of the Federal Government, promising fields, such as in the areas of materials research, biotechnology, nanotechnology,

recycling management, process technology, and environmental engineering, are included.

Sustainable raw materials industry

Non-renewable resources should only be used in the long term to the extent that their functions can be replaced by other materials (second management rule of the Strategy for Sustainable Development). A sustainable raw material industry requires the use of non-renewable and renewable resources in a way that enables current as well as future generations to have comparable economic potential and avoids creating ecological and social burdens.

Even if many mineral raw materials on our planet will remain available for a longer period of time, it is necessary to improve resource efficiency in the production of goods, increase recycling, and increasingly substitute depletable with renewable resources and secondary raw materials consistently in order to achieve the highest degree of a closed raw materials cycle. In the production and refining of raw materials and in commodities trading, appropriate ecological and social standards need to be adhered to.

Goal for 2020: Doubling resource productivity

The goal of the Strategy for Sustainable Development is to double resource productivity by 2020 compared to 1994. The strategy for a Sustainable Raw Materials Industry as developed below serves this purpose. The current pace of the (productivity) increase would not by itself be sufficient for achieving the goal set. In order to achieve a sustainable use of resources, additional measures must therefore be employed. This includes changes in the behaviour and consumption patterns.

Against this background, the Federal Government has developed an integrated policy approach that develops proposals for action as well as measures for a sustainable raw materials industry in order to continually improve materials and resource efficiency in Germany.

2. Fields of action

In order to reach the goal, an intelligent reduction of the demand for raw material is essential. In satisfying the demand for raw materials, negative social and ecological consequences in a global perspective must also be prevented.

a) Improving material efficiency

Increasing the efficiency of the use of materials is a central element of a sustainable raw materials industry. In addition to conservation of resources, efficiency also makes a major contribution to improving the competitiveness of companies, and it drives technical innovation.

For the processing industry, costs of materials currently represent about 40% of their central cost pool, whereas labour costs only account for about 20%. Since 1960, materials productivity (factor 2) developed much slower than labour productivity (factor 3.5). On the basis of expert forecasts, it is to be expected that, in the total process of producing goods, an increase in efficiency of between 20% and 30% is possible.

Ecodesign

In order to reach this increase in efficiency, it must be included in the product design and development stage that less material and energy will be used for the production of products, and that these products are resource-efficient throughout their entire life cycle until their disposal (for example, recyclable). The instrument of ecodesign—that is, the environmentally-friendly design of the product—allows for reducing environmental impact of a product while it is still in the product design and development stages. The less material and energy is used for production and use of a product, and the more its components can be recycled at the end of a possibly long service life, the better.

The EU Ecodesign Directive (Directive [2005/32/EC] of the European Parliament and of the Council of 6th July 2005 established a framework for setting of ecodesign requirements for energy-using products), with future implementation measures providing the legal framework for this. It is also planned to make increased use of product labels, such as the German Blue Angel ecolabel, a benchmark, as well as adding information on the efficiency characteristics of a product.

The Federal Government aims at promoting ecodesign further and will support developments that are in line with this guiding principle.

Re-use

The re-use of products (recycling, second-hand, leasing, joint use, promotion of longevity and repair-friendliness, and repair service) also improves the efficiency of the use of resources.

Miniaturisation

Miniaturising (for example, in memory chips, notebooks, or mobile telephones) leads to considerable savings in raw materials. However, this positive effect on resource efficiency in the field of production is frequently accompanied by undesirable effects related to consumption and recycling. As such, profitability of recycling may be reduced due a lower content of recoverable materials or higher costs for separation and refining technologies, to name just a few examples.

Lightweight construction

An additional field of innovation for improving material efficiency is lightweight construction, which up to now has been used chiefly in automobiles (for example, by using modern high-strength alloys and composites or using natural fibres instead of fibreglass in the interior lining of cars) and the buildings (for example, through increased use of wood for the building structure). Thanks to bionic construction principles adopted from nature for example in civil engineering, it is possible to save a considerable amount of resources, especially in the resource-intensive construction industry. The Federal Government has established funding focuses for research and development in this field.

Bio- and nanotechnological processes

Processes based on biotechnology and nanotechnology make it possible to achieve significant savings in material and energy use compared to conventional processes of production and reduce harmful effects on the environment. The use of nanotechnology materials, for example, in textiles, organic solar cells, or building materials, opens up the potential to save energy and materials. Biotechnological processes are becoming ever more important for the use of renewable resources in the chemical industry, such as in the production of plastics. 'White biotechnology', through the use of enzymes, micro-organisms, and cellular structures, plays a key role in the production of raw materials for the chemical industry in the field of environmentally-friendly and efficient waste-water and waste treatment, exhaust purification, and similar processes. These processes in general require less pressure, lower temperatures, and a smaller supply of energy or chemicals than traditional methods to achieve the desired results.

The potential of nanotechnology for sustainable development will continue to be examined without compromise. At the same time, research into the consequences for the environment and health is to be carried out. It is an integral part in the sustainable development of a technology. The Federal Government supports research projects to examine the risks for people and the environment. These are monitored by the experts of the NanoCommission of the Federal Ministry for the Environment within the framework of the NanoDialogue. This dialogue involves all sectors of society. It also examines questions as to how to inform consumers in an appropriate way and identifies areas of application of particular concern. The NanoCommission will present its first recommendations to the Federal Government in November 2008.

Coupled use

One possibility for the improved exploitation of the resource potential (especially concerning organic raw materials) and an increase in material efficiency in the production process, is the so-called coupled use. The goal here is to decrease the raw material charge during the full production chain through a multiple use of the raw material in all its components, including by-products and coupled products.

Thus, by means of the coupled use of renewable resources, for example, products and/or energy are produced at the same time. This makes possible more effective use of the by-products that incidentally result from the processing of biomass. Agricultural and industrial material cycles are more closely interwoven. In principal, there are two strands of use possible here. These could also be coupled if appropriate.

Strand of use 1: Combined material and energy utilization of biomass. In the production of biodiesel, for example, oil is first obtained from rape seeds. The residue (rape press cake or extraction groats) is in demand as high quality feedstock. By means of transesterification of the rapeseed oil with methanol, biodiesel is produced. The residual glycerine can serve as a raw material for chemical products that can either be used directly to obtain energy or as energy recovered at the end of the products' service lives.

Strand of use 2: Full utilisation of all components of biomass in various utilisation pathways. This falls under the term **'biorefinery'**, a concept that has received a lot of attention recently. Up to now, biorefineries in this sense have not been put into practice on an industrial or commercial scale. They are, however, the subject of comprehensive activities worldwide, chiefly in the area of research, development, and demonstration. Since the increasing complexity of biorefineries tends to reduce its profitability, a key challenge is to optimise the number of their products and the complexity of their processes, so that economically viable production becomes possible.

b) Developing new resource-conserving materials

Innovations in the development of advanced materials (smart materials) also have as a goal to tap the potential of energy and materials savings. For example, through the use of high-strength and super high-strength steels, it is possible to considerably reduce the sheet thickness in vehicles, which offers a more lightweight construction and, thus, reduces fuel consumption. Components in power engineering and in the manufacture of internal combustion engines, such as turbine blades in modern gas and steam power plants, count among the materials that are subjected to the highest stresses. Advanced materials can contribute to prolonging the service life of machines and components to that regard. By reducing friction and wear and tear, the operating life of machines can be extended and the use of cooling lubricants, for example in metal processing, can be reduced.

The use of technical textiles has become widespread, nowadays. Textiles replace heavy metal parts in automobiles or aircraft, span large sports fields in the form of membrane roofing, and provide for the construction of stable bridges using a smaller amount of concrete. These materials are often lightweight, tear-, knife-, and stab-proof, water- and dirt-repelling, breathable, elastic, light-resistant, highly non-inflammable, and also are especially absorbent. Germany plays a leading role in this sector, both on the European and global market. The Federal Government supports this field with research funding.

New materials from domestic renewable agricultural resources and wood also offer additional potential for use in other important sectors of industrial production, the construction industry, and crafts. Especially in the chemical industry, renewable resources can increasingly be employed in new forms of use as well as with innovative materials (such as bioplastics). Recent knowledge developed in basic research as well as progress in chemical process engineering show that it is now possible to run biorefineries that separate renewables, especially wood, into individual components (among others, carbon skeletons and resins) in a profitable way. With this process, basic chemical substances could be produced that are comparable to the substances produced in petrochemical refineries. Also, new perspectives open up for wood as a resource in sustained and energy-efficient construction through the development of new wood construction materials and wood materials as well as wood composites (for example, lightweight building boards, honeycomb building boards, wood polymers/plastic composites, natural insulation materials). Besides wood, agricultural plants (above all, hemp and straw) may be used. In addition to the advantages of being more resilient and easier to work with, these materials have, above all, the quality of saving energy and resources. The Federal Government defines this area as a new focus for funding within the framework of the Research and Market Introduction Programme Renewable Resources. Moreover, departmental research capacities are being expanded. In 2008, an action plan for the use of biomass is to be developed to contain goals, strategies, and measures for the broader use of chemical-technical products made from renewable resources.

c) Improvement of recycling and the use of secondary raw materials

In the field of recycling, Germany plays a leading role in Europe. Germany was the first country to establish a regulatory framework for efficient resource management as early as 1995 with its 'Closed Substance Cycle Waste Management Act' *(KrW-/AbfG)*. Decrees on the return of packaging, batteries, scrap wood, and old automobiles had already come into effect before the European legislature had taken up this idea. Moreover, decrees were elaborated upon in order to improve the quality of scrap wood and biowaste recycling. In the case of some materials, for example, copper, Germany at 54% has the highest recycling rate in the world (EU 45%, USA 41%, and the world 13%). With paper, it was even possible to achieve a return quota of 73%. A further increase in recycling quotas is, however, still possible in many areas (for example, with rare metals from mobile telephones); in others, there remains only limited potential for increase (for example, paper, packaging, or glass). In the recycling of old cars, Germany also occupies a pioneering role in Europe with regard to resource efficiency. In 2006, the recycling quota stood at 87%, which means that it outperformed EU requirements.

Recycling rates of important raw materials in Germany

Material	Recycling rate (2006) in %
Aluminium	35
Lead	59
Steel	90 (secondary material input 45)
Cobalt	20–25
Copper	54
Molybdenum	10

Source: Federal Institute for Geosciences and Natural Resources *(BGR)*

Material cycles

The improvement of recycling aims at returning as much secondary raw material as possible to production. High quality and efficient recycling requires the recovery of waste to be sorted as thoroughly as possible by types of materials. Such a system makes it easier to create substance cycles that are as closed as possible which, in turn, means that material recycled from waste can be reused profitably.

The quota for the use of recycled paper (the share of recycled paper in paper and cardboard production) already reaches 68%. As in the return quota for used paper top quotas are thus being achieved in international comparison and are scarcely improvable.

With other raw materials, still higher return quotas, in part, have been recorded. Thus, the share of used batteries, from which metals such as zinc, steel, nickel, and lead are recovered, went up from 19% in 1999 to 92% in 2007. In the production of glass, 94% of ingredients came from recycling.

The implementation of material cycles is supported by a suitable legal framework and business policy. The most important new regulation was the introduction of the pre-treatment rule *(Vorbehandlungsgebot)* for biologically degradable and organically rich waste (from human settlements) before dumping, in force since the 1st June 2005. Thanks to increased waste separation, separate waste collection, and sorting, a better use from both an energy and substance perspective of materials recycled from waste is achieved. Thus, the total concept—consisting of the separate collection of biowaste, its composting or fermentation, and the pre-treatment of waste from human settlements prior to the depositing on dumps—has led to the situation that in the waste industry emitted 21 million tonnes of CO_2 equivalents less in the year 2005 than during the year 1990. Legislation on the liability of manufacturers for their products, for example, for packaging, old automobiles, electric appliances, and batteries, contributed to increasing collection and recycling figures.

Ecodesign also plays an important role in the improvement of the recycling ability. Concepts of usage and the provision of services that create financial incentives for the retrofitting and repair-friendliness of appliances must be developed, so that material cycles, for example in plastics and metals, can be closed as far as possible.

This goal is already reached today, among other reasons, with the help of limiting the use of hazardous substances and with goals concerning ecological product design ('End-of-life Vehicles Ordinance' *[AltautoV]*, 'Electrical and Electronic Equipment Act' *[ElektroG]*, 'Battery Decree' *[BatterieV]*). It is planned to check existing regulations that impede raw material recycling and, where necessary, adapt them.

Buildings as sources of raw material

Abandoned residential buildings are potential sources of (secondary) raw materials. In the *New Länder* alone, there are about 1.1 million vacant dwellings due to demographic change.

Raw materials in the housing stocks of cities and municipalities

Currently about 10.5 billion tonnes of mineral building materials, such as bricks, tiles, and concrete, have been used in the buildings of the total housing stock in Germany, as well as about 220 million tonnes of wood and roughly 100 million tonnes of metal. According to estimates, this 'materials storehouse' could grow by 2025 by about 20%.
(Data from the Öko-Institut brochure 'Resource Fever', June 2007, p. 18 onwards)

Already today recovery of raw materials from existing buildings by means of selective reconversion or demolition is an important resource issue. An example is the recovery of copper. Neither the actual size of this 'store of copper' (the amount of metal 'stored' in non-residential buildings and infrastructure) in Germany nor its distribution is currently known with any certainty. It is also unclear how these amounts will develop in the future. Furthermore, there is also a lack of reliable construction and demolition forecasts that could provide information on the role metal used in buildings could play for supply of raw materials in the future. Such data is currently being collected in a number of research projects. The findings of these projects will provide the basis for concrete measures concerning the use of buildings no longer needed as sources of secondary raw materials.

Cascading

Cascading describes a strategy especially applicable to biogenic raw materials and products in which they are used to re-use such raw materials for as long, as and as efficiently as possible and to only use them at the end of the cycle as a source of energy. In the process, a given raw material makes

its way through steps that are graduated in order to produce products of higher value at the beginning and of lower value towards the end. Thanks to this procedure, the value added in relation to the resource input overall is increased. For example, higher-quality wood varieties are first used as beams and planks (e.g. in structures) or as veneers (e.g. in furniture), then in several stages of use (e.g. as used furniture) or in additional processed forms (e.g. as chipboard). Paper fresh-/virgin fibre is used first in high-quality paper and finally as secondary fibres in up to eight recycling phases in less stressed products. At the end of their product lives, scrap wood and the used paper fibres of the lowest quality are removed from the material cycle and used for energy. In the use of plastics based on biological materials, it is also important to create conditions for a more efficient use of raw materials and higher added value using cascading.

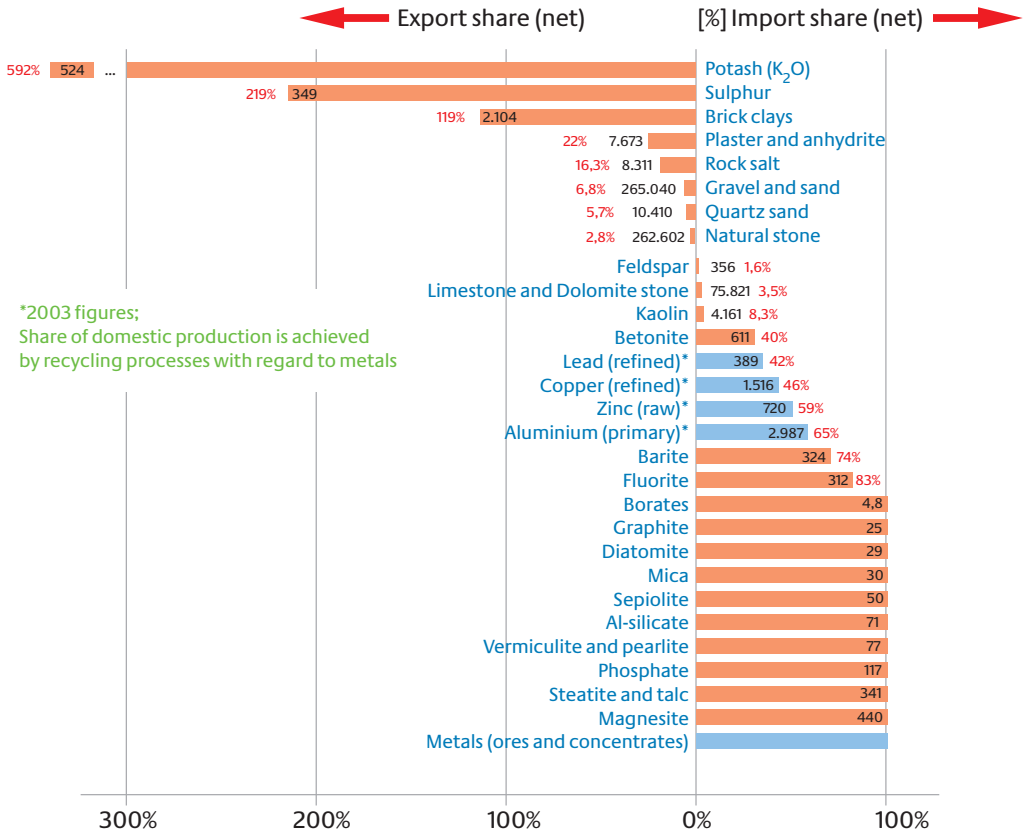
d) Safeguarding the availability of resources

The German economy depends upon resources. For example, iron ore and non-ferrous metals are indispensable in the automobile industry, shipbuilding, and airplane construction or in the electrical and electronics industry. Germany is (at least in the area of metallic raw materials) a country with few natural resources; as such, it is dependent upon imports for many raw minerals despite its success in recycling (see illustration below). These are, to a large extent, imported from Australia, Brazil, Canada, Chile, China, Russia, South Africa, and the United States of America. The dependence upon some materials is particularly acute. For example, 86% of tungsten is mined in China, and up to 89% of niobium in Brazil. Moreover, Germany is confronted with the strong increase in demand from other countries, especially the developing countries, and the correspondingly strong increases in price.

Against this backdrop, economics and politics have entered into a close mutual dialogue and have developed measures designed to lessen Germany's resource dependency in a globalised world.

At the second 'Raw Materials Summit' in March of 2007 in Berlin, Chancellor Angela Merkel stressed the national interest in a secure supply of raw materials and outlined elements of a raw materials strategy:

Raw materials situation in Germany[1)]



Share of net imports and exports in net consumption [1,000 t] in % during the year 2006

1) Taking mineral raw materials important in production as an example.

Source: Federal Institute for Geosciences and Natural Resources *(BGR)*

- It is intended to continue to remove trade barriers and to fight distortions of competition in international trade. Guarantee instruments in foreign trade should be improved and further developed in view of the diversification of sources of supply for raw materials. The Federal Government wishes to integrate issues related to raw materials more strongly into its trade strategies and diplomatic contacts. It welcomes the initiatives of the European Commission on the elimination of trade barriers in international commodities trading. Priority should be given to cutting back export duties and import subsidies in commodities trading in order to ensure fair and free trade. Negotiations on these issues can be conducted, on the one hand, within the framework of the WTO and, on the other hand, in bilateral free trade agreements.

- It is intended to ascertain Germany's domestic raw materials potential and to make better use of it in order to make a contribution to a sustainable raw materials industry. Example: potash salt deposits that cannot be exploited in a cost-effective manner thus far, approved metal ore exploration in Saxony and Brandenburg, and the restoration of collapsed former fluoride mines in the Black Forest and in the *Erz* Mountains.

- Renewable agrarian raw materials and wood are important sustainable domestic resources for sustainable use. In the area of agriculture, it is intended to better open up the potential for cultivation and implementation of a variety of material uses. In order to achieve this, previously set-aside land could be put back to use. In the forestry sector, an aim is a higher and more efficient exploitation of the available virgin wood potential. This makes an important contribution to reducing dependency on imports. In order to achieve this, economic exploitation methods that protect the forest need to be further developed as well as wood logistics improved.

- It is intended to encourage businesses active in the German raw materials processing industry to get engaged in the exploration and the production of raw materials abroad (strategy of upstream integration).

- For a better assessment of the developments in the commodities markets, the economy wishes to establish structures that allow for consolidation of international raw materials data along with information on the developments in the raw materials industry, to make them more useful for the raw materials processing industry. Such structures should take the approach of a kind of 'early warning system' for the raw materials production and processing industry.

- In the framework of development assistance, it is also intended to assist developing countries rich in raw materials in making use of their raw materials, in order to sustainably develop the economic power of those countries and help to fight poverty. In doing so, special attention will be given to implementing internationally recognised minimum standards and adhering to conventions in the areas of the protection of the environment, labour, and health. On the basis of good governance, the raw materials sector can contribute to economic development and diversification in the economic structures of the producing countries while, at the same time, serve the demands of the consumer countries. Thus, the expansion and development of efficient public institutions and reliable framework conditions in the sector policies are supported, since these are important prerequisites for investments by the private economy.

- It is planned to intensify existing research activities in raw materials and to improve networking. Raw materials prospecting and production are especially important research fields for the raw materials industry, research on deposits, and mining. These areas are of particular importance for sustainable development especially in the developing and industrial countries.

In the newly established Interdepartmental Committee 'Resources', it is planned to take up issues related to raw materials supply in close cooperation with the different ministries as well as the private economy, in order to present solutions. At the same time, the Raw Materials Policy Committee of the Federation of German Industries *(BDI)* was set up.

e) Sustainable conditions for raw materials production and import

With regard to the production of raw materials, the interests of the economy are competing with the goals of environmental protection and resource conservation. Mining along with agriculture and forestry provide us with the raw materials necessary for our present way of life. Without these resources, life as we know it would be impossible. This is not only true for technology. Mineral fertilisers—such as potash extracted in mining—are of major

importance for ensuring a sustainable food supply for the world's population. Traces of the naturally occurring common salt (halite, NaCl) for instance are essential for our survival.

Mining can not be done without a certain amount of harm to our natural environment. From the point of view of environmental protection, this use of nature is especially problematical in sensitive ecosystems, such as in arctic regions or areas with a high degree of biodiversity like rain forests. Depending on the process of production, considerable displacements of mass are necessary for the extraction of raw materials. The difference in the quantities between overburden and product in the extraction of rare and precious metals is particularly large. Toxic substances, such as cadmium or mercury that either were tied up in the rock or used in the treatment process, may enter the environment via waste water or dust if they are not treated properly. Shipping of raw materials away from the mining areas also requires a transport infrastructure that occupies additional land and, at the same time, may make previously remote regions available for economic uses. It is, thus, important to aim for an environmentally-friendly production of raw materials, that minimises emissions into the environmental media, limits land use to the necessary extent, and restores the natural environment in these areas as much as possible, once mining is finished.

German mining law contains very strict provisions in this context. Germany is considered to be a world leader in this field. With respect to occupational safety and health, there are very strict requirements. In developing countries, the situation often looks quite different. Here, the implementation of ecological and social standards remains important. This includes the establishment of and adherence to rules of occupational safety and health as well as, for example, the abolition of child and forced labour in mining (as is also demanded in the fourth management rule, 'Dangers and unjustifiable risks for human health are to be avoided'). Furthermore, a sustainable raw materials industry requires appropriate involvement from the local population. Especially small-scale mining is an additional source of income for the local population. In Mali, Burkina Faso, Ghana, Zimbabwe, and Tanzania alone, almost 2 million people depend on small-scale mining. While most of the developing countries have developed a system of rules with minimum standards for this sector, the implementation and control, for example, by supervisory authorities, is frequently insufficient. Where State guidelines for environmental, safety, and health standards do not exist or their compliance is not supervised, the Federal Government calls upon the companies to comply with respective standards for their own sake.

Wealth in raw materials and corruption unfortunately often go hand-in-hand in the real world. In the developing countries rich in raw materials, state income from the extraction of mineral resources and wood, in the normal course of things, flows only partially into the State budget. The huge amount of the flow of money derived from raw materials extraction creates a large temptation for the misuse of funds and other forms of corruption. State institutions are often incapable of evaluating the extracted products correctly and often face competent multinational companies active in the mining industry. Moreover, because of a lack of capacity, they frequently are unable to collect data about income from the raw materials extraction in a transparent manner and allocate it to the public budget. The institutional, political, and legal framework conditions in this sector are often inadequate. Corruption and a lack of transparency undermine efforts to reduce poverty and increase opportunity to participate in democracy. Public resources are often wasted instead of using them to promote sustainable development in the interest of the population at large. Revenue from the trade in high-priced raw materials in particular is often used for waging violent conflicts between various groups of stakeholders.

Internationally accepted standards and conventions

The Federal Government supports the implementation of internationally accepted minimum standards and conventions in the areas of environmental protection and occupational safety and health and incorporates the responsibility of the private sector within the meaning of UN Global Compact and the OECD Guidelines for Multinational Enterprises. Mining companies need to comply with social and environmental standards, and their implementation needs to be mandated and monitored by supervisory authorities and organisations providing financing. Moreover, voluntary initiatives within the framework of corporate social responsibility make an important contribution in this area, for example through the International Council on Minerals and Metals (ICMM) or the self-commitment of financial institutions (the Equator Principles). The Federal

Government supports partner countries rich in raw materials in their efforts to increase transparency in their raw materials industry and to shape the raw materials sector in the sense of sustainability as well as to optimise its contribution to the fight against poverty.

Good governance

Transparency initiatives in which representatives of government, business, and national and international civil society join forces (so-called multi-stakeholder initiatives) have become a central instrument of good governance and the fight against corruption in the raw materials sector over the past years. One example is the 'Extractive Industries Transparency Initiative' (EITI) supported by the Federal Government. This initiative, jointly supported by civil society, the private sector, and governments in a multi-stakeholder process, pursues the goal of clarifying the often unclear money flows inherent in the raw materials business. Moreover, civil society is very active in the creation and support of transparency and good governance in the raw materials sector. The campaign 'Publish What You Pay' (PWYP) is especially worth mentioning here—its work is highly regarded by the Federal Government. Certification measures increase transparency in the production and processing of raw materials and contribute to the reduction of poverty and the avoidance of conflict in those developing countries rich in raw materials.

Transparency and in-company environmental protection

The introduction of environmental management systems in companies, recommended by the Federal Government, contributes to the transparency of business processes. Such management systems should in particular be based on the EU Eco-management and Audit Scheme (EMAS) which, as the only environmental management system, requires compliance with the legal provisions, or ISO 14001. Voluntary environmental reporting by companies, corporate and product-related eco-balance sheets, or the corporate social responsibility approach could also contribute to progress in this field. In principle, corporate social responsibility deals with the environmental effects of the materials used in the production process as well as of the product itself, both on the employees involved and also on the end consumer. In the international context, the OECD Guidelines for Multinational Enterprises and the 'Global Reporting Initiative' (GRI) are gaining in importance for companies that wish to increase transparency with regard to social issues and their environmental impact. The Federal Government appeals to the companies to put these voluntary standards into practice.

Procurement guidelines for wood products

The Federal Government supports sustainable conditions for the production and import of raw materials further with its procurement guidelines for wood products. On the 17th of January 2007, the Federal Government issued a rule that specifies that wood products procured by the Federal administration must be documented as coming from legal and sustainable forest management. As valid proof, certificates from the Forest Stewardship Council (FSC), the Programme for the Endorsement of Forest Certification Schemes (PEFC) or comparable initiatives are recognised. This is a clear signal for the large significance of an environmentally-friendly, socially acceptable, and economically sustainable management of the forests worldwide. Currently in Germany, 70% of the total forest area (about 11 million hectares) are certified; worldwide, this figure is about 270 million hectares (about 7% of the world forest area)—and the tendency is on the rise. The voluntary self-commitments of those in the European paper industry as well as the German wood trade (since the middle of 2007) aim at the rigorous exclusion of wood from illegal sources, worldwide.

3. Concrete projects

In order to implement the approach of a broadly applied raw materials strategy, the Federal Government is pursuing various projects. Some current projects in the various ministries will be presented below.

a) Funding focuses in order to increase resource efficiency

Within the framework of the High-Tech Strategy for Germany and the framework programme 'Research for Sustainability' *(Fona)*, the Federal Government supports innovative research projects. The focus here is on the promotion of joint projects in which partners from universities, research institutions, and businesses, as well as other social stakeholders cooperate.

Resource-intensive industries as lever

Measures designed to increase efficiency in resource-intensive economic sectors can produce a large lever effect and lead to efficiency improvement in additional areas. For this reason, the funding scheme *Innovative Technologien für Ressourceneffizienz — Rohstoffintensive Produktionsprozesse* ('Innovative Technologies for Resource Efficiency—Resource-intensive Production Processes') is aiming at industries using a large amount of primary materials (for example for processing mineral raw materials such as metal or the production of chemical elements).

Funding focus

Funding aims at projects that promise to make a substantial contribution to increasing in resource efficiency in resource-intensive production areas, especially when it comes to resources that are used in considerable quantities. Moreover, rare raw materials for which there is a high import dependency and those that are irreplaceable for high-quality technologies may also be looked at. Production areas such as the production and/or processing of iron, non-ferrous metals, glass, paper, and ceramics as well as the chemical and building materials industries are at the focus of attention.

The production processes are the start of widely diversified value chains. Effects achieved to fate will have influence on all of the subsequent production processes and products. Solutions that optimise the use of raw materials not only at production level but also along an entire process chain are trend-setting.

The role of small- and medium-sized enterprises (SME)

The funding initiative *KMU-innovativ* ('Innovative SME') launched in September of 2007 also promotes research and development projects aiming to increase energy and resource efficiency. The initiative's overall goals are to strengthen cutting-edge research in SME and to introduce innovative businesses to the various specialist programmes of the Federal Government.

Lightweight construction

The funding scheme *Funktionsintegrierter Leichtbau* ('Function-integrated Lightweight Construction') introduced in 2006 provides impetus for the development of novel concepts in lightweight building. The critical innovation criterion is the integration of additional functionalities (for example, sensory function elements) in lightweight construction materials. This could lead to energy and material savings during the utilisation phase, as well as to cost savings in production.

Under the funding scheme *Werkstoffe für Produkte und Verfahren mit hoher Ressourceneffizienz* ('Materials for Products and Processes with a high Resource Efficiency') publicly announced in 2005, a total of fourteen joint projects on the development of materials, that will run to the end of 2008 or the beginning of 2009, receive funding in the amount of almost 25 million euros. The materials developed during the course of these projects will make a contribution to resource savings (energy, material, production, time) in the application of technical systems. The scheme *Höchstleistungswerkstoffe* ('High Efficiency Materials') announced in the middle of 2007 is designed to achieve significant intensity leaps in energy conversion processes through materials engineering.

Nanotechnology

Nanotechnology can also make important contributions to increasing resource efficiency and to the sustainable handling of raw materials.

The announcement 'NanoTecture' (published in the middle of 2007) aims at the development of new or decisively improved building materials, other materials, and processes by means of nanotechnology.

Funding focuses

The research focus is, among other things, on increasing the durability of building elements, reducing the energy need through nanotechnological effects, improving indoor climate, living comfort, and safety, improving energy efficiency and the durability of cement-bound materials, as well as the durability of road surfaces.

The development of new or decisively improved technical textiles or functional clothing through the use of nanotechnology is at the centre of the announcement of the funding scheme 'Nano Textiles' (published in the middle of 2007). The joint project contains new nanotechnological research approaches in the areas of fibres, twine and yarn, fabric, knit fabrics, netting, non-woven fabric, surface coatings, joining technologies, and composites.

Solar cells, lithium ion batteries

The development of alternative materials for flexible, light and low-priced solar cells based on organic and polymer materials is a focus of the common research initiative 'Organic Photovoltaics' supported jointly by business, science, and the Federal Government, published in the middle of 2007. Organic solar cells are especially suited, for example, for the production of electricity in mobile telephones or in the building industry, where they could be mounted on roofs, the sides of buildings, or in windows to produce electricity. Prerequisites for such applications are, however, a higher degree of efficiency, a considerably longer service life of the components, and lower production costs. In order to achieve this, high-tech metals, such as gallium, germanium, or indium are required.

In a strategic partnership between science, business, and the public sector, the 'Lithium Ion Battery—LIB 2015' innovation alliance was launched in November 2007. The goal is the development of a new generation of batteries with a higher performance that, at the same time, are safe, low-priced, and lightweight.

Besides technical solutions, innovation in the field of management in the recycling industry is required . Within the framework of the *Fona* funding focus 'Economics for Sustainability' the Federal Government supports economic approaches that make an effective scientific contribution to the definition of, and further development and implementation of sustainability concepts, for example through the analysis of innovation processes and efficient institutions.

b) Improving material efficiency in small- and medium-sized enterprises (SME)

Already today, there exist modern technologies and suitable management methods to visibly reduce material and energy costs. Daily business practice, however, shows that this potential is not sufficiently utilised. Especially in small- and medium-sized enterprises, the consciousness of possible saving potentials as well as technical, logistical, and management know-how could be improved. A consistent exploitation of cost-cutting potential improves the competitiveness of the German economy and creates new jobs. At the same time, each reduction of energy consumption and material throughput rates means considerable relief for the environment.

Material efficiency programme

A programme for the improvement of material efficiency makes SME aware of current deficits and supports those businesses in the improvement of their use of materials. At the present time, some 350 projects for the improvement of material efficiency in SME are supported by the *Deutsche Materialeffizienzagentur* ('German Material Efficiency Agency'—*demea*). In addition to about 270 initial consultations, fifty follow-up consultations and seventeen networks are supported.

Especially in the context of sustainability, improving material efficiency along the value chain is very important, as by this means significant optimisation potentials can be ascertained jointly and beyond the borders of individual companies. This process can range from simple coordination of the requirements for deliveries (for example, surface quality) to construction design and the specification of the materials required for it. A current study (A. Brinkhoff/U. Thonemann, '*Perfekte Projekte in der Lieferkette*', *Harvard Business Manager*, June 2007) demonstrates that projects along the value chain (supply chain management) very often fail due to problems in the project genesis and execution that could be easily avoided. Clear focus on the improvement of material efficiency should lead to clear decrease in failed projects in supply chain management. A goal of the programme of the German Material Efficiency Agency is to support this kind of networks.

c) *Netzwerk Ressourceneffizienz*

The *Netzwerk Ressourceneffizienz* ('Network Resource Efficiency') was founded in March 2007 by the Federal Government. It is designed to contribute to making Germany's economy a pioneer in the handling of energy and raw materials in order to preserve and protect the environment. Partners in this network are scientific institutions, foundations, associations, labour unions, and businesses. The network appeals to stakeholders who have the opportunity to disseminate the idea of resource efficiency, thanks to their position in companies or science. Engineers, technicians, managers, and scientists are provided a platform here to exchange their experiences and build their knowledge base, in order to be better equipped to initiate improvements in resource efficiency on all levels of energy and raw materials use. The network is open to all people and institutions who are involved with resource efficiency and who wish to advocate the improvement of its intensity.

Goals of the *Netzwerk Ressourceneffizienz*

- Promote an efficient use of resources and a higher esteem for resource protection in the development, production, and supply of goods and services, as well as in consumption
- Bring together the stakeholders and activities in politics, business, labour unions, and science and pool them in competence network
- Improve the sharing of experience in the concrete feasibility of resource efficiency
- Develop proposals for framework conditions, in order to eliminate obstacles and to provide impetus for a more efficient use of resources.

As a platform for ideas, the network supports the experts' exchange of information through regular network conferences, targeted information and assistance for SME, the dissemination of best-practice cases, expert events on selected topics, as well as the drafting of a concept of advanced training for the improvement of resource efficiency in companies.

A main focus of the network is the exploitation of efficiency potential through the employment of information and communications technology (ICT). The Federal Government is cooperating closely with the relevant trade association on this topic. The goal is the decrease in power consumption and, in the interim, the decrease in use of material in this and other industries.

As early as 2004, ICT-related power consumption in Germany amounted to 28 million tonnes of CO_2. Currently, the power required for ICT accounts for about 8% of the total power consumption of the final energy sectors. The consumption of energy by the Internet alone amounts to over 2%. This means that 'virtual' activities use up a considerable amount of resources, despite the widespread opposite public opinion. The progressive penetration of everyday life by the Internet gives us reason to expect that in the wake of the growing inventory of technological devices, infrastructure, and applications, power consumption will increase even further.

At the same time, however, ICT supports resource savings in all economic areas. The intelligent control of motors, machines, and plants in process engineering and building services engineering, computer-assisted product design, or the optimisation of transport and logistics by means of supply chain management solutions contribute clearly to the increase in resource efficiency.

Studies show that, with the aid of the broad application of energy-efficient technologies already employed by front-runners today, a total of about 20 terawatt hours (corresponding to 13.5 million tonnes of CO_2) could be saved in the period from 2007 to 2010. The operators of computer centres in Germany alone could save about 2.5 billion euros in electricity costs by 2010 using these technologies. The *Netzwerk Ressourceneffizienz* picks up this fact and, through its function as a disseminator of information, makes sure that energy- and material-efficient ICT solutions are increasingly implemented.

d) Wood as a substitute for depletable resources

The analysis of the 2004 National Forest Inventory showed that Germany, with its 11 million hectares of forest, enjoys the largest supply of wood in Europe (3.4 billion cubic metres) and a high yearly increase (100 million cubic metres). To accelerate the positive effects on the climate and to environmental protection as well as energy and resource conservation brought about by the increased use of wood, the Federal Government drafted the *Charta für Holz* ('Charter for Wood').

Cluster study forest & wood

A focus of the *Charta für Holz*, the cluster study forest & wood carried out in the years 2006—2008, offers a sound basis for the additional optimisation of the value chain from the domestic forest to wood products and, thus, to sustainable economic development and creation of jobs:

- Various scenarios for future sustainable wood use were investigated, ranging from the additional enrichment of the reserves to the use of the reserves that have been built up since the end of the 1980s. In addition, the potential of wood in all its facets was presented. Up to date the potential offered by hardwood and logging has hardly been exploited.
- In a SWOT-analysis, measures for strengthening the forestry and wood industry were developed and additional starting points for the improvement of a sustainable raw materials industry indicated. Accordingly, the wood processing and manufacturing industry exhibits a high potential for productivity and innovation. Moreover, it is also characterised by a broadly diversified and innovative industrial environment. Excellent mechanical and plant engineers cooperate closely with research institutes and, thus, occupy a leading international position. The sustainable forest management embracing virgin wood supply throughout the country, an excellent

infrastructure, and proximity to the sales markets are important advantages of Germany as a location for the German wood industry. On this basis, it has been able to increase its international competitiveness during the past years.

- In order to be able to continue this positive trend in the future, further development in process engineering and wood logistics, an intensification of cascading, and an amplified supply of virgin wood are indispensable. For this reason, the Federal Government will increase its activities in the areas of education, research, and development concerned with the supply of virgin wood. In the process, the broad-scope approach to securing the supply of raw materials will be important. It is planned to turn the topics of fast growth plantations, wood cuttings from landscape plants and resource-oriented silviculture into new funding focuses in cooperation with business, science, and other stakeholders.

It is intended to further improve the mobilisation of wood use potential that has been unexploited or only partially utilised so far, especially in private forests, through a set of measures.

Measures

- Information and training events for forest cooperatives
- Improvement of logistics through a digitalised navigation system between forest depots and processing sites
- Granting of a virgin wood mobilising premium for forest cooperatives within the framework of the Joint Task for the Improvement of Agricultural Structures and Coastal Protection *(GAK)*
- Offering an innovation prize of 10,000 euros for especially beneficial forestry technology in small private forests
- Series of symposia on the topic 'wood—a raw material with a future'.

Wood as a substitute for other raw materials

In order to intensify the use of wood as a substitute for more energy-intensive raw materials and more resource-intensive materials, the Federal Government initiated a series of research projects.

Research projects

- Research projects for the manufacture of more lightweight wood material with foam cores which allow reduction in the use of materials by about 30% and significantly improve the properties for further processing
- Research projects for the replacement of an ingredient in tropical pockwood that is important for the foodstuffs and pharmaceutical industries, by a more adequate ingredient from domestic beach wood. This would also contribute to the protection of the tropical forests.
- Projects for the improvement of the framework conditions for the use of wood in the construction industry. Thus, in the framework of the project 'ÖkoPot', concrete proposals will be presented whose ecological potentials could be tapped through increased wood use, for example, in the fields of design, construction, and restoration.

e) Transparency and the fight against corruption in the raw materials sector in developing countries

Good governance and the improvement of transparency in the production of raw materials, the commodities trade, and the resulting income are important prerequisites to diminishing corruption and mismanagement as well as for a responsible use of the income. During the German EU and G8 Presidencies in 2007, the Federal Government reinforced its support of more transparency and a responsible handling of raw material.

'Extractive Industries Transparency Initiative'

Germany especially supports the 'Extractive Industries Transparency Initiative' (EITI) as well as certification measures in the raw materials sector. The Federal Government is a member of the EITI supervisory board and supports this initiative politically and financially:

- through contributions to the EITI Multi-Donor Trust Fund (MDTF), whose goal is to support partner countries in implementing national EITI processes;
- through co-financing of the international secretariat in Oslo with the goal of winning new countries as partners in EITI; and,
- through bilateral support in the developing countries putting the initiative into practice, for example in Ghana and the Democratic Republic of the Congo, as well as the supreme audit offices in the CEMAC region.

Certification measures

An additional instrument to increase the transparency in the production and processing of raw materials and, thus, to contribute to the fight against poverty and the prevention of conflicts in the developing countries with rich raw materials reserves, are measures devoted to certification. In the last few years, numerous initiatives have been

established jointly by the mining industry, national governments, international organisations, and non-governmental organisations (NGOs) that aim at a voluntary self-commitment of businesses and at certification systems (for example, Green Lead Initiative, Mining Certification Evaluation Project [MCEP], Kimberley Process).

The Federal Government supports the development of certification systems. Thus, the possibility of a chemical verification procedure in order to determine the place of origin (fingerprinting) of coltan (minerals from the columbite-tantalite group) was investigated. The goal is to check the origin of traded coltan ore and, thus, ensure that no deliveries originating in conflict regions are accepted. The illegal mining of coltan in the eastern provinces of the Democratic Republic of the Congo during the last few years has been repeatedly cited as a reason for the continuation of armed conflict. It was possible to develop appropriate laboratory procedures that unambiguously establish the origin of coltan ore for various mining areas in Central Africa. Basically therefore, analytical methods for determining the area of origin exist, but depending upon the area, they can be very complex. The development and standardisation of the processes continues and is intended to be applied to zinc, tungsten, and platinum as well.

Moreover, the Federal Government supports the project to develop certified trade chains in the areas of mineral raw materials with a focus upon small-scale mining. A first study was presented in April of 2007. The goal of the measure is to reduce poverty and avoid armed conflict in developing countries through the opening up of raw materials potential. At the same time, the measure will contribute to the improvement of the security of supply for the industry, as well as the social and the environmental sustainability of raw materials production.

In the first third of 2008, a pilot project for the certification of a raw materials trade chain was launched in Rwanda.

International conference on 'Transparency in the Extractive Sector'

On the 14th December 2007, the Federal Government organised an international conference in Berlin in the framework of the German G8 Presidency on 'Transparency in the Extractive Sector' that attracted lively interest among the 200 participants (from governments, international organisations, civil society, businesses) from industrial, emerging, and developing countries. The Federal Government will continue to introduce the topic of transparency in the raw materials sector in relevant international forums including the G8, and remain engaged in the dialogue with the emerging countries.

Proof of origin for wood

In addition to the increased purchasing of wood from certified sources and the exclusion of illegal sources by business and public clients, the Federal Government is working intensively on procedures for the proof of origin of traded wood by means of chemical and genetic methods (fingerprinting). This procedure is planned to become ready for use in the coming years for some of the important commercial timbers; thus, it will supplement the existing means of identification. Wood research engaged in by the Federal Government already makes a contribution to the identification of wood by customs offices today, for example in the enforcement of the Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Also in the framework of development assistance the Federal Government supports the implementation of sustainable forest management in many tropical forest countries, among other means, through the introduction of internationally recognised and reliable certification systems within the framework of public private partnerships (PPP). Credible systems of certification can contribute to the reduction of illegal timber cutting. These systems also help consumers to be sure that the raw material they purchase was produced is a sustainable manner. At the same time the socio-political framework conditions in developing countries are ameliorated. The basis for a credible forest certification is a broad-based socio-political dialogue that sets standards of sustainable forest management in a transparent and participatory manner and may also make contributions to the reform process in other sectors in Germany's partner countries of development cooperation in addition to this specific sector.

Currently there are a number of different wood certification systems on the market. The most widely known labels in Europe are PEFC ('Programme for the Endorsement of Forest Certification') and FSC ('Forest Stewardship Council'). Thanks to certification it was possible to make a positive impact in many tropical forest countries (among others,

Brazil, Indonesia and the Democratic Republic of the Congo). However certification is still far from having the broad effects that were initially expected. At present the system is far from being able to meet the growing demand for certified wood products in the consumer countries.

The Federal Government therefore supports the expansion of certification systems, so long as they serve to prove high standards or show a propensity to develop in this direction. Thus German developmental cooperation together with the *Gesamtverband Deutscher Holzhandel e.V.* ('Association of German Timber Trade') currently supports the Malaysia Timber Certification Scheme (MTCS) in achieving sufficient standards for international recognition.

f) Innovative multi use of renewable resources

The Federal Government will be strongly supporting cascading and coupling of renewable resources. The goal is to use renewable agricultural materials and wood more efficiently and at the same time safeguard and further extend Germany's leading position in technologies for the use of renewable energies through further development of innovative approaches.

Measures for the support of cascading and coupling

- Support of research, development, and demonstration projects: public private partnership pilot project 'Lignocellulose Biorefinery' for the full use of all plant components (cellulose, hemicellulose, lignin, extractives) and additional joint projects for research into biorefinery technology, establishment of a new funding focus on cascading and coupling in the support programme 'Renewable Raw Materials'
- Development of innovative processes based on white biotechnology for the manufacture of novel and highly potent substances (solvents, dyes, adhesives, pharmaceuticals)
- Improvement of the legal framework conditions for cascading, for example for packaging made of renewable raw materials ('Packaging Ordinance' and 'Fertiliser Ordinance') as well as for the use of renewable resources in automobile construction ('End-of-live Vehicles Ordinance')
- Examination of additional measures to promote cascading and coupling in the process of drafting an action plan for the material use of renewable resources in 2008 in close cooperation with business
- The extension of international cooperation through cooperation projects for cascading and coupling under the 7th Research Framework Programme of the EU and the strengthening of technology platforms (for example, SusChem) and research networks, such as ERA-NET Industrial Biotechnology.

4. Conclusion

A sustainable design of the raw materials and value creation chains requires the concerted effort of all groups of society and their cooperation at local, national and international levels. Cooperation between politics, science, business, private consumers, the public sector, the media and educational institutions is the key to success for a sustainable raw material industry as one element of the National Strategy for Sustainable Development. In keeping with the suggestion of the Parliamentary Advisory Council on Sustainable Development (Chapter E) incentives for increasing efficiency must also be explored.

The Federal Government will continue to support progress in this important area of sustainability policy and, where necessary, adopt additional measures. This applies especially in view of the goal of doubling raw materials productivity by 2020 compared to the year 1994.

III. Demographic change—opportunities for stronger social cohesion

1. Demographic change and social cohesion

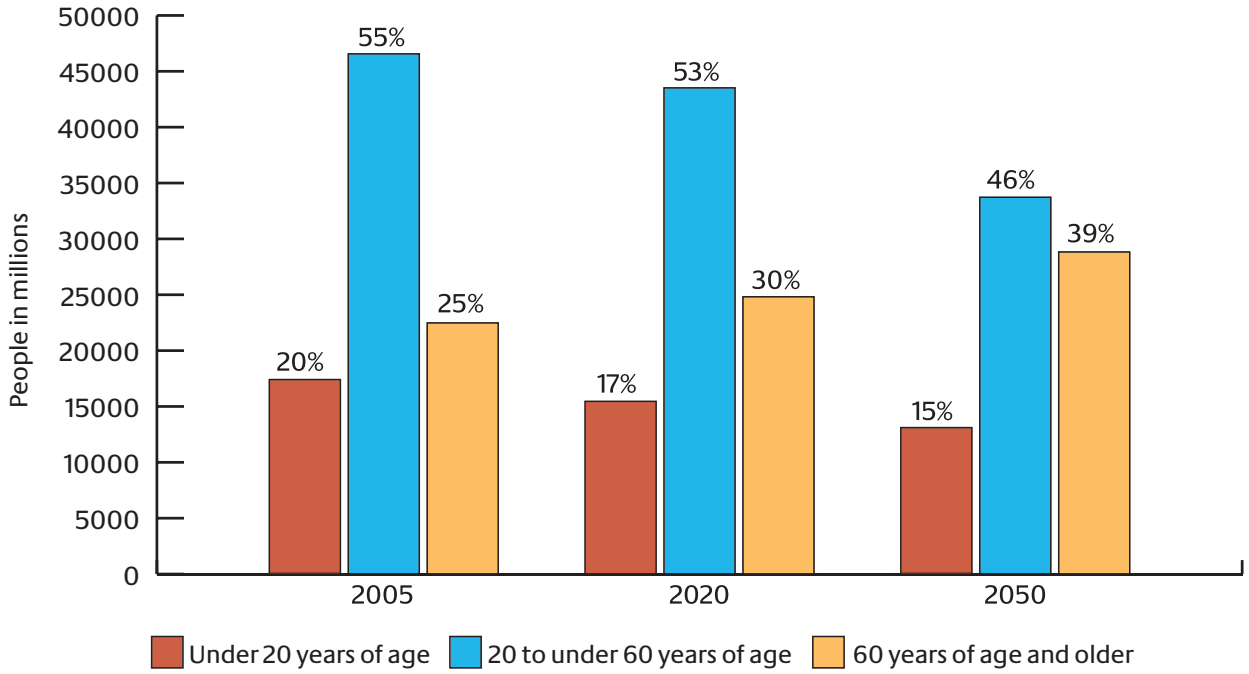
The starting point

In the future fewer people will be living in Germany, and their average age will be higher than that of people today. The share of people older than 60 will increase from approximately 25% today to about 39% by 2050. The trend towards one- and two-person households will also continue. In many large cities more than 50% of households are already comprised of only one person. In the western federal states apart from the city states the average household size will decrease between 2007 and 2020 by an anticipated 2.13 persons per household to 2.02 persons, in the *New Länder* from 2.0 to 1.9, and in the city states from 1.80 to 1.72.

Demographic change will increasingly shape economic and social development. Changes will develop very differently depending upon the region, however. Besides shrinking municipalities there will still also be municipalities and regions that increase in population. Due to the migration of young people out of certain areas and the clear collapse of the birth rate after the reunification of Germany, the ageing of the population in the rural areas of the *New Länder* will be especially evident.

Population development in Germany by year and age group

Development of the German population until 2050[1)]



1) From 2010 estimated values of the 11th Coordinated Population Projection, medium variant.
Source: Federal Statistical Office 2006

Yet, there are also regions in the *Old Länder* that experience a population that is ageing rapidly and where population declines.

Moreover, today's families are already smaller and more diverse; this trend will continue. The daily support networks within families are changing, and the conditions under which they can be sustained are growing more difficult. The same is true for reliable neighbourhoods and municipal structures. These changes lead to decrease in ordinary opportunities for encounters and communication between the generations.

Against this background the involvement of individual citizens for the cohesion of community and society is more important than ever before. This involvement unites people for a common cause, establishes mutual understanding and promotes integration. In addition, community involvement provides people with the chance to develop their abilities and skills and bring them to bear in solving problems.

Demographic change also represents a special challenge for the infrastructure development (cf. activities of the Parliamentary Advisory Council on Sustainable Development, Chapter E). The Federal Government in the context of this Progress Report, however, does not describe the full scope of the debate on demography. The consequences of the changes upon the infrastructure planning or its nature as a structural challenge for the protection of the environment—something that the environmental organisations *DNR*, *BUND* and *NABU* at a conference in November, 2006, were engaged in—are not a subject of this Report. The focus intentionally lies much more up on the opportunities for social cohesion that result from the demographic change and how these are to be apprehended and utilised.

The prerequisite is a policy that is ready to meet the challenges related to the foreseeable changes in the population's age structure at all levels and develops and implements sustainable concepts accordingly. This is true of family policy as well as measures for the elderly.

Sustainable family policy

Sustainable family policy creates a reliable environment for families and contributes to a family-friendly society. Such a policy creates the necessary framework in which more people will again decide to have children and opt for a family. To gear such a policy towards the real lives of women and men and their life plans is one of the most important cornerstones of a sustainable family policy. It is essential for effective support of families that a good mix of infrastructure, time and money is provided.

Compatibility of family and work is of vital importance here. The family allowance gives families after the birth of a child more financial security and makes it possible for mothers and fathers to assume the responsibilities of taking care of their children. The compatibility of family and work is also improved thanks to the fact that work-related child care costs may be deducted from tax. There are also targeted activities to promote services provided to support families as well as to extend child care. With regard to more opportunities for child care the Federal Government, the *Länder* and the municipalities have already considered this point and agreed in 2007 that, by 2013, an average of 35% of all children under the age of three throughout the country will have access to child care. This is an important political achievement. For the support of investments in facilities and care for children under three, the Federal Government has created a special fund under public law in the amount of 2.15 billion euros. Moreover, the Federal Government will provide the *Länder* a fixed sum within the framework of sales tax distribution in the total amount of 1,850 million euros in the period from 2009 to 2013 for this purpose, and, after that period, an annual 770 million euros, in order to relieve the burden of operating costs.

A family-friendly world of work is one of the elements of a sustainable family policy. In January 2006, the corporate programme *Erfolgsfaktor Familie. Unternehmen gewinnen* ('Family as a Success Factor') was launched. Family-friendliness is to become a trademark of the German economy.

Networks for the elderly

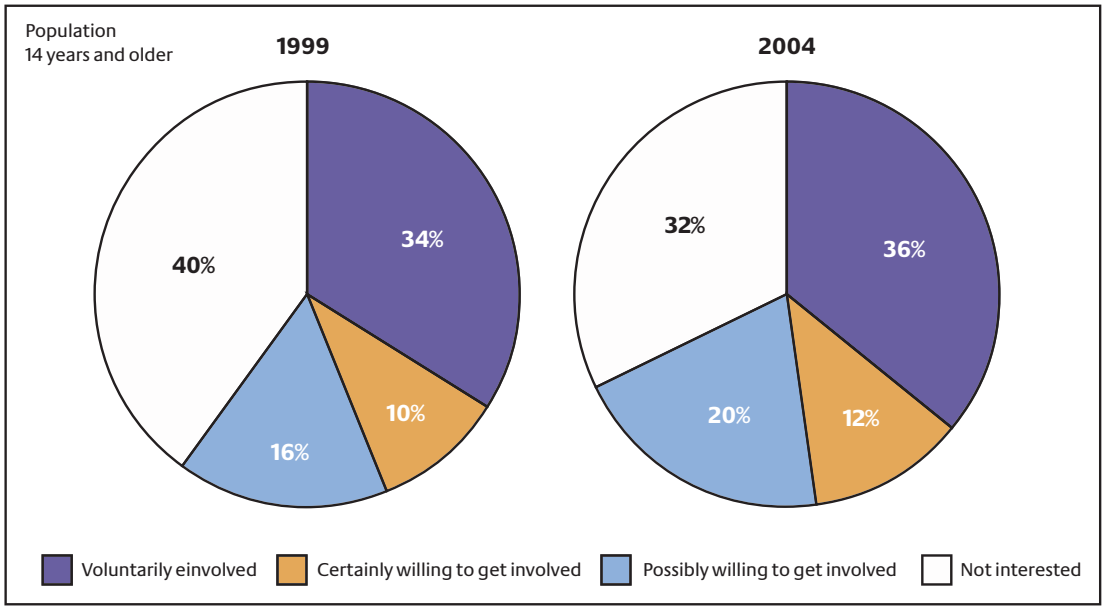
The elderly are especially hard hit by the changes in family structures. Increasing numbers of our older people have no or few children, who in many cases live far away. As one grows older, the family gets smaller, contacts with neighbours fade and the social network weakens. At the same time the importance of family, neighbours and social networks with regard to quality of life and coping with critical situations in life increases, e.g. if people need care.

For this reason, becoming more aware of the importance of networks of personal contacts is essential. Existing networks must be maintained and new contacts need to be established. A living environment that considers the needs of an increasingly elderly society improves their opportunities to continue to participate in social live as the grow older. Such an environment is growing in importance, since the elderly spend a larger portion of their time in their homes and in the immediate vicinity of their homes. A corresponding design of their homes—including comprehensive barrier-free homes and neighbourhoods—enables the elderly to maintain an independent and personal life style, while it also benefits families with children.

We need to break new ground in order to prevent the risk of loneliness threatening the elderly, to strengthen the solidarity of the generations and to create new structures of intergenerational support. Solidarity and cooperation between the generations even outside of family structures is increasing in

Voluntary involvement and willingness to get involved

1999 and 2004



Source: Survey of Volunteers, 1999 and 2004

importance as a factor of social stability. The elderly can, and wish to, play an active role in this process.

The active 'elderly'

People in Germany are becoming not only older but are remaining active longer. For most people the higher life expectancy brings with it 'windfall years', since many of the elderly possess a large amount of experiences, creativity and innovative power. Often they are ready to share their time in order to make use of these potentials to their own benefit as well as to the benefit of others.

Already today, the commitment on the part of the elderly is indispensable. Important challenges will be to interest even more of the elderly in civic involvement—and also to offer them an attractive perspective for the new phase of life that comes with their retirement from a life of work. An active and productive life after retirement will play an important role—for society, for the economy and for the elderly themselves.

The picture still prevalent in our society today that the elderly only produce costs is no longer valid. Therefore, the picture of age and the elderly in our society is due for a drastic revision.

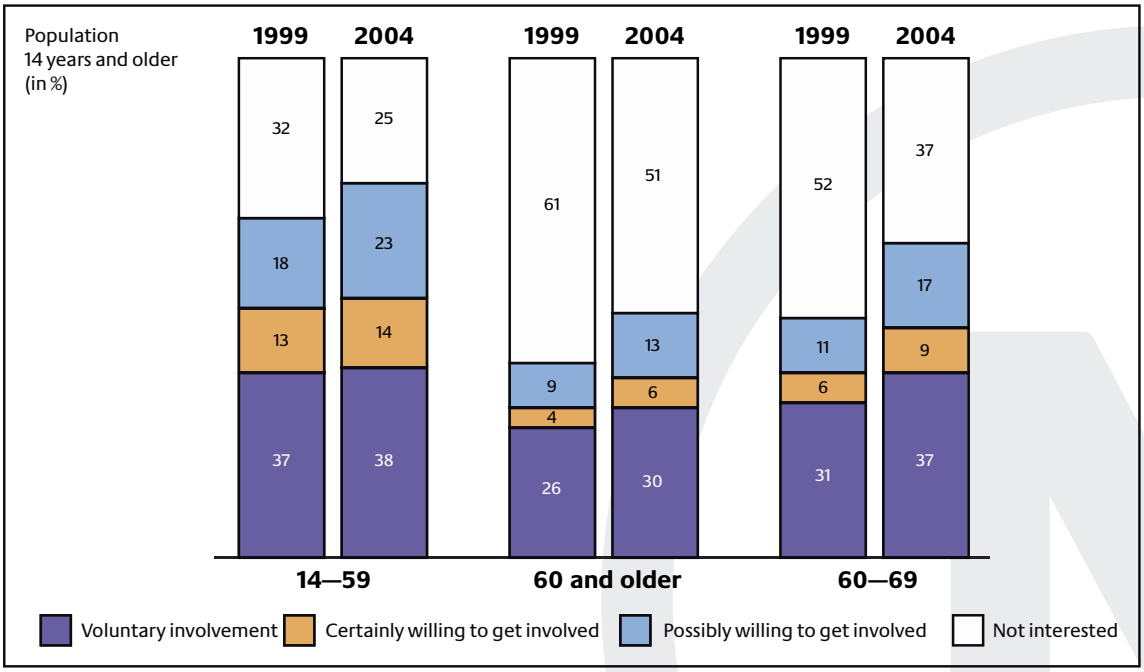
More than 23 million people or 36% of the population over 14 years of age are active volunteers today, with this tendency on the rise. The willingness of people of getting involved that up to now are not active as volunteers has increased even more strongly. The basis for this stirring of energy has been provided for years by associations, churches, charitable institutions and foundations of various kinds. The achievements of volunteers in many areas, such as social activities, sports, culture, health, education, environmental protection, crisis prevention and consumer protection cannot be esteemed highly enough.

Especially noteworthy is the increased involvement of the elderly, especially among the 'young elderly' (60 to 69 years of age).

The potential of those who would be ready to get involved in some voluntary activity has, by no means, been exhausted. We have to seize this opportunity and create room for and more opportunities for new forms of civic involvement. It is in the interest of the State and the common welfare to support this growing interest in being involved, allowing citizens the room and the opportunities to shape their environment and let their own powers unfold.

Willingness to get involved within different age groups

External involvement potential



Source: tns infratest, Surveys of Volunteers 1999 and 2004

2. Promotion of voluntary and civic involvement

a) Legal framework

Voluntary and civic involvement require the appropriate legal framework in order to be able to thrive and to have an impact. The Federal Government has, therefore, introduced the following measures:

- The *Gesetz zur weiteren Stärkung des bürgerschaftlichen Engagements* ('Act for the Additional Strengthening of Civic Involvement'), passed on 10th October 2007 on the initiative of the Federal Government, considerably improved fiscal conditions. The charitable benefit and donation law was simplified, bureaucracy reduced, and financial support increased. The State emphasises, thereby, its high regard for the people who accept an honorary office, while reducing the obstacles for voluntary engagement.

The most important changes:

- All purposes recognised as non-profit are recognised as a charitable donation for tax benefit purposes.
- The ceiling for donations deductible from tax was raised from 5% and/or 10% to a standardised 20% of total amount of the income, independent of the purpose of the donation. For businesses, the alternative limit was increased by 100% to 0.4% of the sum of the total turnover and the wages and salaries paid during the calendar year.
- The maximum amount for the endowment of foundations was raised from 307,000 euros to 1 million euros in ten years, without limitation to the year the foundation was established (donations in order to increase the capital base of the foundation).
- The so-called *Übungsleiterfreibetrag* ('coach's tax allowance') was raised from 1,848 euros to 2,100 euros during the calendar year.
- A tax allowance (so-called *Aufwandspauschale*) for part-time jobs for a public corporation or a charitable organisation either as an employee or contractor in the amount of 500 euros per calendar year was introduced in order to promote tax-privileged purposes.
- The limit to which non-profit corporations are exempt from corporate and trade tax for business activities was raised from 30,678 euros to 35,000 euros of income per year. The same applies to special-purpose sporting events and the threshold for lump-sum input tax.

- Risk coverage through an accident insurance for persons active in an honorary capacity, as foreseen in the *Siebtes Buch Sozialgesetzbuch* ('Seventh Book of the Social Code'). Most *Länder* have also passed framework contracts with accident insurers.

- With the *Pflegeleistungs-Ergänzungsgesetz* ('Supplementary Nursing Care Service Law') of 2002, an important step was made to extend the area of honorary involvement in nursing care through service offerings with a low threshold. Civic involvement is already, in addition to family and professional support, an important pillar of nursing care today. This applies to both outpatient and inpatient nursing care, as well as to the provision of support and household services to outpatients in assisted living facilities.

Good practice

With the project **pflegeBegleiter** ('Nursing Care Companion') promoted by the Federal Government within the framework of the Federal Government model programme *Generationsübergreifende Freiwilligendienste* ('Cultural Voluntary Service for all Generations'), the joint responsibility in the neighbourhoods and municipalities for the care of persons requiring help, and above all the elderly, is to be supported. By now, approximately 1,800 volunteers are active as nursing care companions. They receive special training beforehand in order to provide qualified assistance, advice, and active support to caretakers tending to needy family members with their daily questions and individual problems and if they cannot cope with their overall situation.

- With the reform of long-term care insurance in 2008 (*Gesetz zur strukturellen Weiterentwicklung der Pflegeversicherung (PfWG)*–'Law on the Structural Further Development of Statutory Long-term Care Insurance'), the basic principle of 'outpatient before inpatient' and civic involvement will be strengthened. The reform creates additional legal framework conditions to develop further the recognition of volunteer commitment for the benefit of others. This reform is part of the Federal Government's overall concept for the improvement of support and care for persons in need of care, the handicapped, and the elderly.

The most important changes:

- Those in need of nursing care receive higher benefits in outpatient nursing care. This means they will receive a higher amount of money, both for engaging the services of nursing care providers and for securing nursing care themselves.
- Nursing care service centres coordinate, direct, and connect services provided in different care areas and by different care providers with the involvement of social and civic initiatives and self-help groups or self-help organisations, in order to facilitate the provision of care and support oriented to individual needs in the area close to the residence of the individual care receiver. Nursing care service centres will be set up in those *Länder* that decide to do so.
- The generally allotted start-up financing in the amount of up to 45,000 euros per nursing care service centre can be raised by up to 5,000 euros if volunteers are involved in the activities of the centre.
- It is planned to increase public funding for the extension of low-threshold care services as well as for honorary structures and self-help activities in the area of nursing care. Moreover,

it is intended to include volunteers and other individuals willing to get involved on an honorary basis as well as the self-help sector into the group of care-providing structures eligible for public funding.
- The costs of the preparatory and ongoing training of volunteers, of the organisation and planning of their service, and for related expenses can be taken into consideration in the compensation for the nursing care provided.

In the future, it will be one task of the contract partners of nursing care self-administration at the regional level to identify opportunities by which volunteers willing to get involved can become active in outpatient- and inpatient-care facilities.

b) Commitment at municipal level

Voluntary, honorary, and civic involvement occur chiefly at the municipal level. The Federal Government contributes in this context to promoting social participation and activity, to making better use of existing potential, and to developing further the mature culture of civic involvement.

Already today, there are municipalities where there are not enough people using certain public facilities due to the demographic change. This goes hand in hand with restricted or non-existent financial leeway for action. In these municipalities, the maintenance of public facilities, such as schools, kindergartens, swimming pools, libraries, cultural and civic centres, is endangered or already severely curtailed. At the same time, the need for new facilities, services, and the restructuring of residential areas is increasing. Here, the issues are also to guarantee the community's public services by means of appropriate instruments, and to cater for the maintenance of quality of life for both the young and old in the localities.

Voluntary and civic involvement can be an important part of a new strategy to solve such problems. For this purpose, appropriate teamwork between full-time and honorary staff, professionals and volunteers, subsidiarity and support networks is necessary. Museums, swimming pools, libraries, meeting places. or bus lines organised largely on the private initiatives of citizens themselves have been gaining widespread prominence. People who read to children and those who help with school homework support child care centres and schools. Retired senior citizens advise start-up companies. The provision of care to dementia patients and those needing nursing care close to their place of residence and their families can be improved upon by supplementing the work of professionals with work performed by volunteers.

This is an encouraging development, because civic involvement now received the attention it deserves. At the same time it makes clear that if matters can be solved through voluntary engagement this takes priority over administrative action.

Local networks need to be established in order to coordinate cooperation among the various forms of involvement, such as volunteer agencies, youth and senior associations, parent initiatives, and support organisations. It is only through cooperation that lasting, sustainable effects can be created and the qualifications of the volunteers as well as the quality of their involvement be guaranteed. Concentration at the same time eases the cooperation with administration and the political decision makers.

Civic involvement requires stable, supportive, and professional infrastructures that guarantee networking, motivation for active involvement, and dissemination and are meanwhile able to react to changed involvement and motivation. In order to attract citizens who are prepared to get involved, their interests need to be considered in more depth. These interests change both in terms of time and topic depending on the respective living situation and age of the persons involved. The Federal Government, therefore, attaches special importance to setting up structures, for example, as has occurred with volunteer agencies, senior citizens offices, or self-help contact points, and will continue to support local innovative structures through the funding of model projects.

Good practice

In the last two years, the project *Partizipative Kommune* ('Participatory Municipality') was carried out by the nexus—Institute for Cooperation Management and Interdisciplinary Research in Berlin on behalf of the Federal Government, in cooperation with both the National Network for Civil Society *(BBE)* and the *Akademie für Sozialarbeit und Sozialpädagogik e.V.* ('Academy for Social Work and Social Education').
The project focussed on cooperation networks and civic involvement as critical success factors for eastern German municipalities.

In both model municipalities, Strausberg in Brandenburg and Sondershausen in Thuringia, important factors (among others, networking, instruments and strategies of communication, continuing and advanced training opportunities) were identified that are suitable for improving the cooperation between the three sectors of public administration, civil society, and business in eastern German municipalities. These success factors and their effects upon the social and economic development were incorporated into the '*Leitbild einer bürgerschaftlich verfassten Kommune*' ('Mission Statement of a Civically Designed Municipality').

Implementation strategies for the development of the potential of civic society are collected in a manual. A citizens' exhibition of best practice examples and positive experiences by engaged local players helps set in motion the dialogue between citizens and politicians and stimulates participation.

Additional information on the project can be found at *www.partizipative-kommune.de*. Website available in German only.

c) Initiatives at the federal level

Involvement in the sense of self-help aid bears fruit if the State creates appropriate possibilities for citizens to get involved and to shape and influence their environment, and if there is room for self-determined, independent action and self-organisation. In accordance with the principle of subsidiarity, it is always the smaller social unit that enjoys priority in the solution of social problems. Participation, understood as co-determination and co-decision making, is a key factor here.

The federal level supports and promotes involvement in accordance with the principle of subsidiarity, for example,

- in the design of legal and other frameworks;
- in model projects for the stimulation of improvements;
- through the promotion of infrastructure projects on the national level; and,
- research and evaluation.

Acknowledging the demographic change that will so clearly characterise our co-existence in the future is an important framework condition and, simultaneously, the prerequisite for civic involvement. The challenges resulting from this change must be noted. Above all, it is imperative to make use of the opportunities resulting from such change for a strengthening of social cohesion.

Initiative ZivilEngagement Miteinander – Füreinander ('Initiative CivicInvolvement: One for All—All for One')

With its initiative *ZivilEngagement Miteinander – Füreinander* ('CivicInvolvement: One for All—All for One'), the Federal Government is starting the ball rolling on a process for further development of the promotion of involvement and the development of civil society in cooperation with non-governmental stakeholders. At the same time, in appointing for the first time a Commissioner for CivicInvolvement, the Federal Government has accepted the challenge to more strongly anchor the mission statement of civil society in public awareness and politics, and to spur on the bundling of related activities. Out of a large number of measures and activities, the establishment and extension of the services of volunteers of all generations, as well as the further support and promotion of a country-wide infrastructure have special importance.

In addition, the Federal Government has enacted measures for the general strengthening of civic involvement. These include the promotion of the involvement of migrants through a strategy developed in cooperation with migrant organisations and thorough research on this topic, as well as measures in the *New Länder*. The establishment of citizen foundations and strengthening of civil societal involvement against right-wing extremist initiatives within the framework of the programme *Vielfalt tut gut* ('Diversity is good') deserve particular mention.

Strengthening the culture of recognition

The implementation and further development of the Federal Government's initiative CivicInvolvement will boost public recognition of and reinforcement for civic involvement, and promote a broad public dialogue. For the development of a social climate of esteem for civic commitment, the active involvement of all civic partners is required, especially that of business. For there lies a large potential for civic involvement in the respective localities. This is also true for honouring the expertise that has been gained in voluntary activities by the human resources departments of companies. Also, on the State level, there is a need in many places for revised thinking about a new role for the State as a civil partner that strengthens civil involvement, eliminates bureaucratic behaviour, and enables creative flexibility. Committed persons must feel that they are not stopgaps for State tasks, but rather that they are indispensable and responsible citizens who can take an active role in shaping policy.

The Federal Government also makes a contribution through reinforcing the culture of public recognition for the services provided by involved persons.

Good practice

An example is the yearly action week throughout Germany in support of civic involvement under the aegis and active collaboration of the Federal President. Furthermore, a campaign is scheduled to be started in cooperation with all partners from civil society in support of a climate of recognition for public involvement.

Promotion of infrastructure facilities on the national level

The Federal Government promotes facilities whose goal is to network infrastructures and to use the resulting synergies. Exemplary here are the National Network for Civil Society *(BBE)* that links business, the State and non-profit organisations; the *Bundesarbeitsgemeinschaft der Freiwilligenagenturen e.V. (bagfa)* ('Federal Working Group of Volunteer Agencies'); and the *Bundesarbeitsgemeinschaft Seniorenbüros (BaS)* ('Federal Working Group of Senior Citizens Offices') which assumes a mediator role between the policies of involvement and senior citizens.

Promotion of model programmes

In addition, a promotion of model programmes in the framework of the stimulus powers of the Federal Government is in place. To be mentioned here are, for example, the programmes 'Voluntary Services Embracing all Generations', 'Voluntary Services of all Generations', the action programme 'Multiple Generation Houses', the 'Local Alliances for Families', the model project 'Self-organisation of the Elderly', the programme 'The Old Create the New—Active in Old Age', and also the testing of new, innovative forms of living and care.

Generationsübergreifende Freiwilligendienste
('Voluntary Services Embracing all Generations')
In the programme that ran from 2005 to 2008, volunteers were active in various areas of service (for example, kindergartens, schools, families, urban neighbourhood centres, inpatient facilities, and hospices). Many of the projects dealt with people of a migratory background or included this experience. In the programme, young people were active in phases of (professional) re-orientation as well as older persons, with their wealth of knowledge gained from experience. Over 6,500 volunteers took part in the programme sponsored by about 150 bodies *(www.zentrum-zivilgesellschaft.de/modellprogramm/)*. Website available in German only.

'Voluntary Services of all Generations'
The flexible but binding proposal to get involved developed in the model programme *Freiwilligendienste aller Generationen* ('Voluntary Services of all Generations') is designed to be comprehensively implemented step-by-step throughout Germany and networked with local structures.

In the implementation and expansion of the volunteer service of all generations, it is planned to take the different specific needs and resources of the various municipalities and associations into account, so that sustainable structures might evolve.

Mehrgenerationenhäuser **('Multiple Generation Houses')**
The nationwide action programme improves the infrastructure for families and strengthens the cohesion between the generations—also outside the family. At the same time, a market for household services geared towards the needs of the individual generations and living conditions has been developed (*www.mehrgenerationenhaeuser.de*—in German only). Since 2008, the Federal Government has been supporting 500 multiple generation houses throughout Germany.
Good practice: In Ingelheim (Rhine), a community house for children was converted into a multiple-generation house within the framework of the action programme. Together, the young and the old built a bike track that is used not only by the young right next to the building. All of the generations are included in the activities. The elderly help children with homework. Children and the young contribute in return by doing grocery shopping for the elderly. In several events, for example, in concentration and memory training for the aged, several generations use rooms set aside for this purpose. In the café, parents, children, and the elderly feel equally at home. At the same time, the café serves as a meeting place for those seeking and offering help: a nanny who provides child care, ersatz-grandparents for flexible child care, or a reliable helper in the household.

Lokale Bündnisse für Familien **('Local Alliances for Families')**
Partners from politics and public administration, businesses, trade associations and trade unions, churches, associations, societies, institutions, and initiatives seek to improve the life and working conditions for families by means of joint projects at the local level *(www.lokale-buendnisse-fuer-familie.de)*. Website available in German only.

Selbstorganisation älterer Menschen **('Self-organisation of the Elderly')**
In this project, twelve municipalities that wish to consign voluntary services, such as swimming baths, libraries, or day care homes for the elderly, completely or partially into the responsibility of citizens will receive advice. The aim is to determine what programmes and services are especially suited for an organisation through volunteers ('self-organisation') and what is needed in order to make such self-organisations successful.

Alter schafft Neues – Aktiv im Alter **('The Old Create the New—Active in Old Age')**
The goals of the new programme are to more firmly anchor the mission statement of growing old while remaining active in the consciousness of the municipalities, to expand the possibilities for participation on the part of the elderly, and to establish participatory processes in the community. Representatives of senior citizens, senior citizen offices, *seniorTrainer* (senior citizen coaches), and *seniorKompetenzteams* (senior citizen competence teams) will be given an important function. The basis is the memorandum 'Participatory Creation and Decision Making', worked out by the Federal Working Group of Senior Citizens Organisations *(BAGSO)* jointly with a broad partner spectrum in the *Länder*, municipal umbrella associations, welfare care, churches, and sports. The main goal is to initiate a 'social movement' for an active role of the elderly in society. In this context, organisations and institutions should be made to be more receptive to the involvement of the elderly *(www.alter-schafft-neues.de)*. Website available in German only.

Testing of innovative forms of living and care
In order to promote a self-determined life and living style even at an advanced age and to more strongly demonstrate alternatives to traditional nursing homes, new forms of cooperation between old age care, housing associations, municipalities, and the skilled trades are studied and appropriate information media for citizens seeking advice created. Not least in the cooperation between professional and honorary staff lies an opportunity for the elderly to remain in the familiar surroundings of hearth and home, even if they require assistance and nursing care *(www.modellprogramm-wohnen.de)*. Website available in German only.

Research on voluntary and civic involvement

In the framework of a series of research projects, the basis of the voluntary and civic involvement is illuminated. An example is the Survey of Volunteers.

Survey of Volunteers

The first and the second Survey of Volunteers represent a methodologically sound and representative investigation of civic involvement based upon a sample of 15,000 people. Subsequent studies will be conducted at intervals of five years. Data is collected as to the extent and the character of civic involvement on the part of the population, on the composition and socio-demographic structure of the group of volunteers, and on motives, as well as on the involvement potential of those who up to now were not engaged. Thanks to its broad scope, the Survey of Volunteers represents a census of central importance for the discussion and further development of civic involvement in Germany.

Additional research projects relate to civic involvement on the part of Turks, individual and institutional 'shapes' of the civic involvement, social corporate responsibility in Germany, as well as to youth in rural areas.

3. Exemplary fields of action

a) Involvement in rural areas

The Federal Government supports the adaptation of the rural areas to the demographic development, in order to prepare them for the future as attractive areas to work and live. Especially in the structurally disadvantaged regions, a holistic approach is needed, that stretches beyond the field of agricultural and the environment. Such an approach must also include the income possibilities outside of agriculture as well as the services that cater to the demands of the population, such as postal service, education, and infrastructure facilities. The task will be to strengthen the social commitment of the persons living in the regions concerned.

As a result, the following goals can be specified:

1. Strengthening the economic power and diversification of the rural economy, with the goal of maintaining existing jobs and creating new ones;
2. Adapting the technical and social infrastructure to the needs of the population; developing innovative adaptation strategies for dealing with out-migration and an ageing population;
3. Improving the perspectives for the young;
4. Protection of environmentally sound and sustainable use of land, as well as the preservation and integration of the environmental and recreational functions of rural areas; and,
5. Strengthening civic commitment.

Options result from, for example, the deployment of new communications technologies and age-appropriate technologies that compensate for health-related restrictions upon mobility and that are able to support daily care and social participation.

Special attention needs to be given to the situation with regard to prospects for youth in rural areas. A lack of internships and jobs and an inadequate infrastructure lead to out-migration in many structurally weak regions. This is particularly true for young women. The demographic change that is accompanied with a reduction in the number of schools and continued education facilities will exacerbate this situation as well as affect the quality of life for the youth in rural areas.

In order for youth to face this development, it is important to encourage them to take more personal initiative, i.e. take their future into their own hands.

Federal competition

By means of the federal competition *Junge Menschen gestalten die ländlichen Räume* ('Young People Shape Rural Areas)', young people in rural areas are to be motivated to develop specific ideas, innovations, and exemplary measures that are transferable to other locations, aimed at securing the future of rural regions and improving the quality of life for young people. The competition is scheduled to be held in 2008/2009.

Linkage of policy areas

A number of measures are designed to link various policy areas that are relevant to rural areas more closely than has been the case up until now:

In 2008, an interdepartmental working group will develop a plan on the further development of rural areas. As of 2008 by means of the 'Joint Task for the Improvement of Agricultural Structures and Coastal Protection' and in addition to measures designed for integrated rural development, broad band Internet access as well as district heating networks will also be eligible for funding in the future. The results of the conference series on 'The Future of Rural Areas' will be communicated in politics, among specialists and made known to the public. The conclusions of the discussion processes will be summarised yearly in a future forum 'Rural Development' and the measures initiated will be described. The results of the conference '*Lebensqualität in ländlichen Räumen sichern — Neue Dienstleistungsmärkte nutzen*' ('Preserving the Quality of Life in Rural Areas—Using New Service Markets') should provide stimulus for the extension of the service industry in rural areas.

Model project 'Demographic Change—Shaping the Future Structure of Public Service Provisions in Rural Areas'

Civic commitment plays a key role in rural life even beyond the design of new developmental concepts. In this context, the Federal Government last year started an approximately two-year model project in two regions in eastern Germany that have been markedly affected by demographic change, Szczecin Lagoon and South Harz Mountains/Kyffhäuser.

Exemplary and transferable measures: model project *Demografischer Wandel – Zukunftsgestaltung der Daseinsvorsorge in ländlichen Regionen* ('Demographic Change—Shaping the Future Structure of Public Service Provisions in Rural Areas')

In both model regions Szczecin Lagoon and South Harz Mountains/Kyffhäuser, coordinated approaches and opportunities to solve the existing problems in important fields of public welfare are to be tested. The following areas, among others, are affected:

- Residential models for families and the aged
- Multiple-generation houses
- Residential environment
- Transport infrastructure and concepts of mobility (public transport)
- Provision of health services, schools, opportunities for sports and leisure activities
- Public administration
- Retail trade
- Networking and cooperation of regional development agencies
- Business
- Agriculture
- Labour market and vocational training

It is intended to include additional regions in the project by means of an exchange of experiences and through the support of individual projects that match the goals of the model projects. This would allow for use of selected innovative approaches developed in these additional regions to supplement fields of interest not covered in the model regions. Moreover, it is planned to expand the project to the *Old Länder* during the course of its project period in order to allow western German regions to participate in the experiences of the model regions in the *New Länder*.

b) Health and nursing care

In connection with demographic change, the question of the coverage of and provisions for not only the elderly but also people who are chronically ill, disabled, or in need of nursing care will become increasingly more important. In order to enable a self-determined life in a familiar setting, it is important to organise the services pertaining to care, support, at-home nursing care, and social participation in a more decentralised manner. The services offered must be better integrated into the neighbourhoods and networked there.

For this reason, it is necessary to continuously develop further the structures for providing assistance to the elderly. Besides the improvement of quality, such a development must first and foremost be aimed at providing targeted and efficient care for those needing it. The Federal Government is especially working towards closer integration of public health care and aid to the elderly and further developing the structure of the care system in terms of the district living and mobility concept. In this context, the coordination and networking of the service providers play an important role. Moreover, the Federal Government contributes to strengthening the role of out-patient care, the development of new assisted flatsharing models to extend in-patient care based on actual need, and a stronger link between professional care and voluntary commitment by means of legislative measures and the funding of model projects in a targeted manner.

Civic commitment is already an indispensable pillar of the health care and social system and, thus, of any active and solidary civil society. The exchange of experiences, mutual support, and comprehensive information sharing help the persons affected in confronting and coping with their illnesses. At the same time, those affected regard themselves as experts in their own affairs and advocate a stronger involvement of patients. This goes hand in hand with the demand in a more democratic structure of the existing healthcare system.

With the law for the reinforcement of competition in the statutory health insurance *GKV-Wettbewerbsstärkungsgesetz* ('Competition Reinforcement Law'), the financial support for self-help groups was improved further. It was ensured that the funds will be used for the support of self-help, and the application procedures were improved.

Good practice

Within the framework of the Federal Government's **model programme for the improvement of the provision of care for persons in need of care** with different projects related to winning of new, training, and monitoring of volunteers, for example in Tecklenburger Land, it could be demonstrated that civil commitment or the employment of volunteers and social expertise successfully counteracted the isolation of solitary persons, and that it is possible for neighbours, friends, and socially committed persons to provide support in the field of low-threshold care. Also to be highlighted are the projects supported by the Federal Government, 'Centre for Mental Health' at a district hospital in Bavaria, and 'Social Personal Care—Help in Old Age—SOPHIA' of a foundation in Bavaria, as well as the projects BETA I and II in Baden-Württemberg that were engaged in the creation and expansion of civic commitment. Model projects such as these are proof of the overwhelming readiness of many persons to get involved for the benefit of society on a voluntary basis and to offer their active support in the field of the provision of care services.

4. Interdepartmental initiative

In order to reinforce civic commitment against the background of demographic change, joint projects were launched within the framework of the National Strategy for Sustainable Development of the Federal Government in addition to the measures of specific ministries. The challenge will be to better identify and develop existing potentials, so that through the reinforced activation of volunteer and civil commitment, public welfare facilities can be maintained, public services supplemented, and new services offerings developed. The willingness to commit to and participation of citizens must be supported by the readiness of municipalities to cooperate and create structures that enable and support citizens' efforts.

Within the framework of the interdepartmental initiative, information on successful projects and networks of civic commitment is gathered in regions that have been differently affected by demographic change. The data is then processed and selectively passed on. The same is true for information regarding the legal and fiscal framework as well as funding possibilities. There is still a large amount of uncertainty concerning these subjects at the local level. Experiences in different projects and model programmes will be incorporated here. It will also be a task of the initiative to improve access to reports, publications, and events. It is planned to provide more information on civic commitment on the information platform *www.erfahrung-ist-zukunft.de* (Website available in German only).

The individual measures:

- **Public relations:** In the framework of the media relations and public relations of several ministries, the Federal Government will call attention to the variety of promising opportunities for the participation of committed citizens. Through this, it will be possible to create pronounced social cohesion in the municipalities, support public facilities, and improve existing services.

- ***Bürger initiieren Nachhaltigkeit (BIN)* ('Citizens initiate Sustainability'):** In order to make practical examples better known, it is intended to revive the earlier successful action of the Federal Government 'Citizens initiate Sustainability' *(BIN)* and to continue the competition in modified form. The goals of the initiative are to link the National Strategy for Sustainable Development with local and regional activities and to promote civic commitment for sustainable development. The competition will be geared towards the subject of 'cohesion between the generations'.

- **Study:** A compilation of relevant data and facts on the subject 'demographic development: potentials for civic commitment' will contain a basic, statistical survey of commitment as well as the various developments in the regions. The study is to be made available to the interested public, especially citizens doing volunteer work as well as associations and institutions.

- **Databases, Internet portals, publications:** A database embedded in the 'Citizens Network' (*www.das-buergernetz.de*—in German only), an Internet portal linked to it, and brochure will serve to provide information on the opportunities and methods of activating voluntary commitment. The database contains salutary examples of voluntary commitment of every age group and access to existing databases on the Internet. The Internet portal is designed to facilitate the access to various umbrella organisations and superordinate support facilities for civic or voluntary commitment—not only of senior citizens—in the framework of the municipal public welfare services. In this way, the portal could serve as a guide through the 'maze of data' in the area of honorary service. The brochure contains examples of the maintenance and expansion of public services offered through the activation, enabling, and encouragement of voluntary or civil commitment including, among other things, information on activities in model regions. In this way, civic commitment, especially against the background of demographic change, will be made easier—not as a stopgap for the fulfilment of existing State functions, but rather as an opportunity for more participation and active civic planning.

A brochure on the various mission fields and impacts of voluntary and civic commitment with special reference to sustainability and demographic change is intended to collect contributions on the future perspective of demographic development and civic commitment.

5. Conclusion

Demographic change is one of the major political challenges in Germany and will continue to shape policy in the coming decades. There is—as the *Länder* in their contribution (Chapter G) remark—no easy recipe for the solution to demographic change. At the meeting of the Federal Cabinet in Meseberg in the summer of 2007, it was emphasised it is 'a humanitarian Germany for all generations' that is at stake. A sustainable policy faces this trend and makes use of the opportunities inherent in the demographic change as a stimulus for the stabilisation of civil society, for additional solidarity between the generations, and for a culture of unity. The first steps in this direction have already been taken. The Federal Government intends resolutely to continue down this path and implement a broad mixture of measures and activities on every level.

IV. Feeding the world

Two of the Millennium Development Goals defined in the United Nations Millennium Declaration (cf. Chapter D. VI.) by the Heads of State and Government were to halve, between 1990 and 2015, the proportion of people who suffer from hunger and halve, between 1990 and 2015, the proportion of people whose income is less than 1 US dollar a day.

The achievement of these goals is at risk because, in addition to the rising costs of energy, the world market prices for foodstuffs during the last few years and above all in 2006 and 2007 have increased drastically. The OECD expects that real prices for grain, rice, and oil seeds on the average will be about 20 to 30% higher in the next ten years than the average over the past ten years. At the same time, significantly larger price fluctuations are anticipated. Additionally, climate change will increase the harvest risks. Significant consequences for the food safety of the poor and poorest households in the rural and urban regions of the developing countries are predictable. The inadequate access to foodstuffs and the distribution conflicts over resources could also, in turn, endanger democratic processes, destabilise states, and lead to a problem in international security.

The multiplicity of causes for the price increase that led to the crisis and the broad scope of the solutions proposed underscores the necessity of the dovetailing of individual political areas, especially in agricultural, environmental, energy, developmental, trade, international, security, and research policies.

1. Cause analysis

In reaction to the current developments, the Federal Government in April, 2008 established a high-level departmental working group to discuss the question of the situation regarding feeding the world. This group consisted of external experts who analysed the causes of the current situation and the expected further developments and derived options for action.

Rising prices, larger price fluctuations

The Food Price Index of the Food and Agriculture Organisation of the United Nations (FAO) representing international prices of the food

commodities went up by 9% in 2006 in comparison to the previous year, and by 23% in 2007 in comparison to 2006. The price increase was mainly driven by dairy products (+80%), oils and fats (+50%), and cereals (+38%). For the period from March 2007 until March 2008, FAO even reported an increase in the FAO Food Price Index by 57%. The United States Department of Agriculture comes to basically the same results. The price increase was accompanied by higher price fluctuations than in the past, especially in cereals and oil seeds. The following long-term factors indicate that the period of falling world market prices for various agricultural products is over.

No single cause

There is no single cause for the food price development. It is the result of the interaction of structural and cyclical factors. Furthermore, short- and long-term effects overlapped and led to strong price fluctuations.

The price increase cannot be attributed to a sudden drop in the world production of food. In fact, the food production per capita worldwide even increased slightly. This development did not lead to an improvement in the supply situation, especially not in many developing countries. On the demand side, the development in prices, among other things, is determined by population and economic growth in the developing countries and especially in the emerging countries. Greater economic wealth is, fortunately, accompanied by higher purchasing-power in the demand for food, especially for higher-quality refined products (for example, meat). As a consequence of increased income, a change in nutritional habits can be observed, which follows the pattern in the OECD member countries.

Rising crude oil prices increase the costs of food production, on the one hand, and lead to competition for land utilisation, on the other, as more agricultural raw materials are used for bioenergy production. The globally growing cultivation of biofuels may lead to an increase in prices for food.

Short-term effects

The following factors increase prices in the short term:

- The worldwide production of cereals went down by 1% in 2005 and by 2% in 2006. This was primarily due to weather-related harvest losses. In the eight major export countries for cereals alone, that produce half of the world cereal, the amount produced sank by 4% in 2005 and by 7% in 2006.

- The drastic increase in crude oil prices made agricultural production (fuel, fertilisers, and pesticides) and the transport of goods more expensive. This made the use of agricultural raw materials for energy production more attractive, so the cultivation of energy crops increased in the short term to the disadvantage of food production. This increase varied depending of the region. The World Bank estimates the influence of increasing energy prices (fuel, fertilisers, and pesticides) on the increase in the price of agriculture raw materials in 2008 to be about 15%.

- The worldwide stock of rice and cereals has fallen during the last few years to the lowest level in about thirty years. In the EU, agricultural reforms in the context of the Uruguay Round of the General Agreement of Tariffs and Trade (GATT) and the sinking (support-) prices since 2003 have led to decreasing State stockpiles. In addition, increasing bioethanol production has led to sinking surpluses in important agricultural export countries. The consequence of the reduction of stockpiles is stronger price fluctuations, because it is not possible to buffer prices anymore through the clearing of stock.

- Export duties and/or restrictions imposed by some of the major export countries lead to regional export losses for certain products and price increases. This causes even greater difficulties for poor countries dependent upon imports.

- Finally, as a rule the countries most affected by the food crisis have neither the budget reserves nor functioning social security networks to assure a minimum supply of food for the groups of population threatened by malnourishment and hunger.

Long-term causes

The chief structural causes of the price increase in food that are likely to have long-term effects are the change in the quality in demand for foods, population growth, a neglect of the agricultural sector in many developing countries in the last few decades, and the increasing demand for biofuels.

Long-term trends

The quality demanded for food has changed: with increased income, people's nutritional habits also change. Moreover, for the first time in history, more people live in urban areas than in the countryside. People increasingly favour food of animal origin and rich in proteins that requires a much greater use of cereals to produce. The per capita consumption of meat in China, in the estimate of the International Food Policy Research Institute (IFPRI), doubled between 1990 and 2005. The high consumption, in comparison to the rest of the world, of food of animal origin (dairy products, meat, eggs) in the industrial countries has long required a high utilisation of animal feed. The European Union is a net importer of animal feed (about 32 million tonnes of animal feed excluding cereals).

The annual global population growth of about 80 million people along with increases in income in states with high economic growth have led to a pronounced increase in the quantitative demand for food and animal feed. The FAO expects an annual global increase in the demand for agricultural products (food and animal feed as well as renewable resources) of 1.6% by 2015 and, subsequently, of 1.4% by 2030.

During the past few decades in many developing countries, the agricultural sector was neglected. Investments in farming and the rural agricultural infrastructure were simply inadequate. The low productivity is due to a lack of adequate infrastructure; this is intensified due to a lack of good governance as well as domestic or regional conflicts. Moreover, cheaper exports of foodstuffs from the industrial countries as a result of export subsidies or other forms of export promotion retarded the production and productivity development in farming, most noticably in some African countries—but also in Asia and in the Caribbean. Many African countries that, twenty years ago regularly exported agricultural products, have become net food importers today because they have neglected the agricultural sector. Currently, the FAO counts 82 countries with serious deficits in the production of food, among them 40 African countries.

The demand for agricultural raw materials for the production of bioenergy is growing, above all for sugar, maize, tapioca, oil seeds, and palm oil. The cultivation for biodiesel and bioethanol, on as little as estimated 1.9% (2007, FAO) of the worldwide farmlands to date, is an additional factor especially regionally in the pronounced price increase for most agricultural produce. The agricultural output on this farmland, however, lies below the yearly fluctuations in the amount harvested, for example as a result of weather. In addition, in the manufacture of biofuels, large amounts of by-products result that are used as animal feed. But in the future, depending on the scenario and model assumptions, the planned increase in the demand for agricultural fuels, without mobilising the land reserves that could be sustainably used, increasing productivity, and the use of residual materials, will have a pronounced influence on the prices of certain agricultural produce. Depending on the scenario variables and model assumptions, however, these estimates and prognoses differ widely. The OECD (2008) estimates the price effect of the demand for bioenergy on wheat prices between 2013 and 2017 at about 8%, on the prices of coarse grain at about 11%, and on oil seed prices at about 6%. The IFPRI (2008), on the other hand, already estimates the current effect (2007) of the use of agricultural fuels on price to be about 10% for wheat and about 20% for maize. The increased fuel prices make the use of agricultural raw materials as a source of energy generally more attractive, while the cultivation of energy plants increases in the short term at the expense of the production of food. There are regional differences. Regionally, the increased demand for raw materials for the production of agricultural fuels has already caused food crises or accentuated them (e.g. the tortilla crisis in Mexico).

In the future, it is to be expected that the climate change, through the decrease in rain and the shifting of the rainy periods, especially in the southern hemisphere, will lead to water shortage, less arable land, and reduced agricultural productivity. Besides loss of land through desertification, salinisation, erosion, and soil nutrient depletion, the use of land for settlement areas and infrastructure reduces the amount of arable land. In developing countries in the tropics and subtropics, harvest reductions are largely to be expected. In some of the countries in Africa, the harvests from rain-dependent farming could by 2020 be reduced by up to 50%. It is for this reason absolutely essential to move from traditional means of irrigated farming to water-saving methods in order to reorganise them more efficiently. Where this remains possible in a sustainable fashion also in the future irrigation based on demand should be expanded, because on 18% of the worldwide arable land using artificial irrigation, over 40% of the world's food is produced.

Likewise, on a longer-term basis, the decline in biodiversity can represent a threat to food security. Plant breeding is dependent upon the reservoir of wild plants in order for new properties to be found and introduced into useful plants. The worldwide cultivation of only a few plant varieties reduces biodiversity.

2. Repercussions of global price increase in food products

Partial positive consequences

An increase in the prices of food products is, first of all, an expression of market conditions; it also initiates reactions in production and consumption. Initially, of course, the strong agricultural export countries profit from the price increases. However, price increases also offer opportunities for the rural areas in developing countries where approximately 75% of the world's poor live.

Positive repercussions

Farmers, even smallholders in developing countries, are able to generate higher revenues if they produce for the market. In so doing, they may receive production incentives and improve their incomes (helping to combat rural poverty). In order to do so, their production costs should not increase to the same degree as the prices for food. They need a favourable political framework and, in specific cases (a lack of seeds), concrete and immediate aid. Because of the tendency for smallholders to reduce the number of fields under cultivation in the face of increasing operating costs instead of increasing their productivity in anticipation of higher prices—

especially in the rural regions in which poverty is especially pronounced—the locally available supply quantities may decrease even further in the short term and lead to additional price rises for foodstuffs.

By increasing their agricultural production, exporting countries, many developing countries no doubt included, can obtain additional income in foreign currency on the world market. In view of the price level for agricultural products that is expected to remain high, economic foresight would endorse the reinvestment of this income in farming and in agricultural research.

Higher food prices can lead to a re-evaluation of political priorities in the developing countries to the advantage of agriculture. This is especially important, because up to now in many countries, agricultural development has been neglected, even though a large part of the population still lives in rural areas and depends on farming.

Price increases open up opportunities for the use of previously unused land lacking any particular nature protection value and for a sustainable productivity increase.

Negative consequences of increasing prices of food products

Rising food prices are, however, chiefly a problem of survival for the poor, especially in developing countries. In the face of rising prices, the poor can no longer cover their basic needs and, thus, become more dependent upon external aid. This leads to an unbalanced diet with the associated damage to health. The World Bank and IMF assume that, as a consequence of the rise in prices for food, the number of those living in poverty will increase and, hence, nullify the many years of combating poverty (Millennium Development Goals). The most affected are the poor urban populations and the marginalised rural populations who must spend a large percentage of their income on food. In addition, bottlenecks in food supply may have a further destabilising effect in socially and politically unstable regions. In industrial countries, people with low incomes are forced to spend an increasing amount of their money on food.

As a consequence of the higher food prices, the countries dependent upon food imports (especially the 82 Low-Income Food-Deficit Countries, FAO) must in return pay considerably more or reduce their imports. The trade balance of these countries thus becomes even more unbalanced. Moreover, additional burdens upon their public budgets follow, since many of those affected countries (must) react to the emergency situation by lowering their import duties or taxes or by expanding subsistence programmes or social security systems. The consequences of these measures put economic growth and the total development of the affected countries in other areas at risk, since other measures, such as investments in agriculture and the agricultural infrastructure, are neglected due to the emergency situation.

For international aid organisations, the higher prices mean that they are only able to purchase a reduced amount of food in order to stay within their budgets; they must, in the event that no additional money is put at their disposal, curtail rations and/or exclude individual population groups or countries from their aid packages.

The pressure on sea fish stock may increase through high food prices. Rising prices generally increase the pressure on vulnerable habitats of plants and animals (e.g. rain forests), as well as on the resources water, soil, and air when agricultural use or a rise in productivity does not proceed sustainably.

3. Previous activities

The reaction of the international community to the food crisis is coordinated by the United Nations (UN) through a task force under the direction of the UN Secretary-General Ban Ki-moon, together with the participation of the World Bank and the IMF. The Heads of the UN Specialised Agencies, the United Nations Programmes and Funds, as well as the World Bank and the IMF agreed on this at a meeting of the Chief Executive Board (CEB). Under-Secretary-General for Humanitarian Affairs and Emergency Relief Coordinator, John Holmes, and the Senior United Nations System Coordinator for Avian and Human Influenza, David Nabarrois, are responsible for coordinating the work of the task force. The first meeting was held on 12th May 2008. On the 3rd of June, the task force produced a draft of its 'Comprehensive Framework of Action'.

From the 3rd to the 5th of June, 2008, the FAO High-Level Conference on 'World Food Security: the Challenges of the Climate Change and Bioenergy' took place. It provided a forum of highly-ranking participants for an international discussion regarding the current crisis in food prices and proposed solutions. On the 22nd of May, 2008, a Special Session of the Human Rights Council on the right to food was held. The Council of the European Union dealt with the political effects of the high food prices at a meeting held on the 19th/20th of June, 2008.

The Heads of State and Government of the G8 met from the 7th to the 9th of July, 2008, in Tokyo/Hokkaido. On the initiative of the Japanese

Presidency, who had placed the subject prominently on the agenda for the summit meeting, the G8 members agreed upon a catalogue of measures aimed at overcoming of the world food crisis.

Emergency and food aid

Emergency and food aid is an important short-term measure for avoiding imminent hunger crisis.

German financial aid

The Federal Government supports the work of the United Nations World Food Programme with a voluntary annual contribution of 23 million euros. In 2008, moreover, the World Food Programme received an additional 34 million euros, and German NGOs received more than 16 million euros for food aid projects in particular countries. In response to the current crisis, the financial contribution to the work of the NGOs was increased by a further 5 million euros.

The United Nations has requested the international community to provide additional funds.

An increase in the German commitment in emergency aid and transitional assistance must be accompanied by structurally established initiatives for the reform of the Food Aid Convention (FAC) and new orientation of the World Food Programme (WFP). The three Rome-based UN organisations are of major importance in the current crisis, due to their expert knowledge in the field of rural development (FAO and IFAD) as well as in food aid. All three UN organisations are currently undergoing a structural reform process in order to be able to adequately meet the increasing future challenges posed by hunger and food crises. The goal is a further increase in the efficiency of their work, in tandem with the integration of food aid, into a long-term and sustainable strategy in order to safeguard food supply. Germany supports these reform efforts, both through intensive work in the decision-making committees and through financial means.

Multilateral cooperation

Furthermore, Germany is involved in the financing of programmes and the definition of strategic orientation of the funding policy, both as a member state of the EU and a member in international organisations. Accordingly, Germany's share in the funding of EU programmes for agriculture and food security amounted to approximately 100 million euros in the year 2006.

Thus, Germany over the past few years has supported the idea that the World Bank once again allotted a high proportion of its funds for rural development. In its 'World Development Report 2008: Agriculture for Development' the World Bank made rural development a focus of attention; as such, World Bank clearly stepped up its expenditures: between 2005 and 2007, the loans granted in the farming area in comparison to the period 1999–2002 increased by 38%. At the 2008 Spring Meetings of the World Bank, the President of the World Bank Robert Zoellick announced additional increases. In the meantime, World Bank created a 'Global Food Crisis Response Facility', endowed with 1.2 billion US dollars, and announced that it would increase its support for farming from an annual 4 billion US dollars to 6 billion US dollars.

The regional development banks have announced additional funding allocations for the developing countries in their respective continents; this applies to the African Development Bank, the Asian Development Bank, and the Inter-American Development Bank. In addition, the International Monetary Fund (IMF) is prepared, promptly and without bureaucratic delays, to aid membership countries that are experiencing an unfavourable balance of payments due to high food prices. The programmes will be adapted to the needs dictated by the changed circumstances, in order to be able to react flexibly to the development of the food prices.

National and international research policy

There can be no doubt that, in order to overcome the food crisis, appropriate research activities must be intensified. The Federal Government has introduced, in the framework of its High-Tech Strategy for Germany, specific measures in order to find long-term solutions to sustainable food security. These measures include research funding, promotion of innovation, and the creation of suitable environment. Moreover, the Federal Government's comprehensive strategy for the internationalisation of science and research is another step closer to providing solutions to the research and innovation policy challenges posed by globalisation. One element here is the reinvigoration of cooperation with the developing countries in the fields of education, research, and development.

Agricultural trade policy

The EU is the largest food importer in the world. It has improved, unilaterally or bilaterally, access to the agricultural market for developing countries and, thereby, has clearly improved the stimuli given to farming production in those countries.

EU agricultural trade policy measures

The EU EBA initiative 'Everything but Arms' gives the 49 least developed countries (LDCs) in the world a unilateral customs and quota-free market access to the EU. This market access applies basically to all agricultural goods; as of 2009, it applies also to sugar and rice. The EU is prepared in exchange to accept cuts that may, in certain areas, be painful. In sugar, for example, these measures may lead to strong reductions in production, the closing of factories, and a loss of jobs. In the framework of negotiations for the WTO Development Round, the EU in 2005 succeeded in Hong Kong in establishing an appropriate goal aimed at all industrial countries for 97% of all customs lines.

The Economic Partnership Agreements (EPAs) or the corresponding interim agreements replace the previous trade regulation in the Cotonou Agreement with WTO-compatible free trade agreements. ACP (Africa, Caribbean, Pacific) countries that conclude such EPAs with the EU basically receive customs and quota-free market access with transition periods for rice and sugar.

Within the framework of the Generalised System of Preferences (GSP) of the EU, developing countries will be granted clear customs tariff reductions for a large part of their products—including non-sensitive agricultural products. Should the developing countries have acceded to, and apply UN conventions in the area of human rights, the environment and social policies, they will even receive customs-free access to the market by means of GSP+.

A successful conclusion of the Doha Round as quickly as possible may contribute to the stabilisation of the world agricultural market through the elimination of trade barriers. Restraints on world trade (export tariffs, embargoes, price subventions, and import restrictions) often have—especially in the medium- or long-term—negative and unintended consequences for producers and consumers.

Reforms of the EU agriculture policy

Furthermore, the EU has, in implementing its comprehensive agricultural reforms, already made a contribution to the global development goals of a conclusion to the WTO Round even before they are passed. In addition, the EU adapted the Common Agricultural Policy to the EU's own development-related trade agreements:

- Subsidies that tend to distort trade are being reduced in an ongoing reform process. Measures prevailing today in agricultural policy (direct payments) are largely being decoupled so they no longer provide any direct stimulus to production that could lead to an over-production that disturbs the markets in developing countries. They also take into account environmental, social, and regional policy goals more strongly than in the past.

- The EU export reimbursements have already been drastically reduced since 1992 from 9.47 billion euros to 336 million euros. It is the goal to completely eliminate agricultural export reimbursements step by step.

- Within the framework of agricultural reforms, more specifically the comprehensive reform of 2003 as well as the cotton and sugar market reform of 2005, the EU internal prices have been drastically reduced. This will allow for a reduction of the tariff for the external protection in the bilateral agreements and, later, also in the WTO.

Bilateral development assistance and cooperation projects

Thanks to restructuring of the existing budgets, the Federal Government intends to make new commitments in the amount of 600 million euros in 2008 for the overcoming of the world food crisis. In particular, counselling and training of smallholders in methods of increasing their productivity as well as fair access—especially for women—to land and other productive resources of rural business play a central role in the Federal Government's bilateral commitment. The support of social security networks through infrastructure measures and the support of the processing industry are also parts of a comprehensive development assistance approach.

In addition to the traditional development assistance, the Federal Government has, since the beginning of the 1990s, provided support for the restructuring of farming in Central and Eastern Europe. This is achieved through a combination of agricultural policy guidance and practical projects. Since 1993, approximately 70 million euros have been provided from the federal budget. The programme has supported the reconstruction of the farming sector and, thereby, contributed to the improvement of the food situation in Central and Eastern Europe. Since the beginning of 2008, the prerequisites in order to expand the cooperation programme beyond Central and Eastern Europe into other regions were fulfilled.

Measures securing the food supply

Germany supports the work of the FAO for measures securing the food supply.

Support for the work of the FAO

Germany makes donations to the FAO Trust Fund that are used to support beacon projects deemed exemplary for sustainable securing of the food supply in developing countries. Among these, is the project 'Bioenergy and Food Security', which studies the effects of the bioenergy boom upon the food situation in three developing countries by way of example. The goal of the project is to develop strategies and approaches whereby the economic, ecological, and social effects of the production and consumption of bioenergy can be influenced for the benefit of food security in developing countries.

4. An additional concept for action

A concept for action must take into consideration that the deterioration of the supply situation and an increase in malnutrition in many developing countries may have various causes and effects, both on the demand side as well as the supply side of the food markets. Crisis phenomena occur especially in the countries and regions where increasing food and energy prices impact on an already existing state of poverty. The programmes for improving global food security are, therefore, not just concentrated on the issue of farming (increasing productivity; global approach) and concrete programmes to fight poverty (regional approach). Instead, they must give constant and parallel consideration to the interplay between environmental, economic, and social concerns in light of population and economic growth, climate change, and the security of energy and water supply.

Because of the grave humanitarian effects and the accompanying endangerment of the political stability of some of the affected countries, rapid and decisive action is necessary on the part of the international donor community and governmental and non-governmental aid organisations. In the short term, the issues are to alleviate the acute emergency, to provide humanitarian aid, and to take action to calm the volatile agricultural markets. At the same time in the developing countries, structural measures that are effective in the medium- and long-term must be employed, in order to increase the production of food. For this purpose, broad-based programmes aimed at increasing farming production through support of sustainable farming economic and social reinvigoration of the rural areas in the developing countries, and an intensification of the appropriate research are essential. In view of the critical problems, these measures must be introduced immediately. In all stages of this process, it is of particular importance that the developing countries act first on their own responsibility. The aid of the international community should be primarily intended to support the governments in developing countries in assuming their own responsibility and to eliminate structural barriers.

The developing countries, both in bilateral and in multilateral frameworks, should be called upon to accept their own responsibilities in securing food within the framework of a concept aimed at sustainable development and should be supported in their endeavours to do so. At the same time, support for the production of food and the creation of sustainable job and income possibilities in rural areas should clearly be expanded. These goals are part of the right to adequate food, the observance of which is part of the code of good governance. The FAO Voluntary Guidelines regarding the right to adequate food provide the proper orientation. As it is stated there, the international donor community is also called upon to make food security a chief area of concern. In this context, the Federal Government welcomes the current endeavours for reform and reinvigoration of the multilateral system (UN, FAO, food aid), the most recent measures adopted by the World Bank and the IMF, and especially the initiative of the UN Secretary-General for a coherent action approach from the UN institutions ('Task Force on the Global Food Security Crisis'). The activities of the individual stakeholders must be well-coordinated. The political exchange at the G8 Summit from July 7th to 9th, 2008 provided important stimulus.

Necessary short-term measures

In the short term, the following measures must be adopted:

- To supplement immediate humanitarian aid, emergency and transitional aid, and especially food aid; financing especially via the international organisations. The aid must be accompanied by a reform of the Food Aid Convention that must also extend to the World Food Programme (WFP), the FAO, and the IFAD;
- To make sure that food and income transfers (transfer payments or food coupons) reach the socially weakest in terms of good governance;
- To improve the access to farming resources. These include, especially, aid for seeds, fertilisers, and technologies that are very quickly available, for selected regions, preferably functioning states in Africa;
- To abolish export restrictions immediately. The export stops, newly created by some developing countries, hamper south-south trade especially, and chiefly harm trade among the developing countries themselves;
- To make the Doha Development Round negotiations successful. A multilateral liberalisation of world agricultural trade as soon as possible as part of a balanced overall success of the Doha Development Round would contribute significantly to reducing the impediments and distortions

on the international food markets which are mainly caused through export subsidies and supports. It would also contribute to creating incentives for the production of food in developing countries and to improving food supply;

- To fight unbalanced budgets and unfavourable balances of payments. The thirty poorest countries with the largest lack of supply require about 20 billion US dollars more per year, because of the increased food prices; this drastically exacerbates the balance of payments problem. Here, the IMF is chiefly responsible for monitoring the situation, in order to avoid liquidity bottlenecks and produce action plans.

Medium- and long-term measures

With respect to measures having medium and long-term effects, it is essential that they also be immediately introduced in view of the dramatic problems. The Federal Government sees the following elements as the most important:

- To improve the institutional and legal frameworks in the developing countries. Far beyond the agricultural sector, basic structural changes are necessary, among them: the guarantee and improvement of the rule of law, instruments for the creation of market and price transparency, and socio-political measures aimed at combating poverty. Farming and rural development must become higher priorities on the political agenda of the developing countries. The social security systems must be expanded and/or established. The donor countries will support these processes. At the same time, it is, however, important to make clear the responsibilities of the developing countries in taking their own initiative. The goal is that these countries establish sustainable structures that will last without external aid measures;
- Over the long term, it will be necessary to globally increase the sustainable production of food—especially the domestic production in the developing countries—and to increase the income in the countries ravaged by poverty. A prerequisite for increasing farming productivity is increased investment in sustainable agriculture, above all, from the developing countries themselves. This includes sustainable irrigation farming, for which external help is necessary. All the measures that contribute to the improving the general income situation improve the prospects that the rural population itself can invest in this area;
- To intensify agricultural research parallel to these farming measures. In order to achieve an increase in harvests, research efforts are necessary along the total agricultural production chain and including the logistics industries. In addition, the training of skilled personnel in the developing countries is to be improved through appropriate qualification opportunities and common research and development projects;
- To improve the potential agricultural yields of the cultivated plants via the aid of modern methods of plant technology in order to achieve long-term productivity increases. In this context, an intensive dialogue on the possibilities and limitations of a responsible employment of green genetic engineering must be carried out;
- To avoid competition among various uses. As a result of the global increase in demand for food, renewable resources, and bioenergy, an increasing competition for land and water has ensued. Responsible promotion of bioenergy must take into consideration economic efficiency and ecological and social demands of sustainability. The aims of the increased production of bioenergy are to decrease the dependence upon imports of fossil fuels, contribute to climate protection, and create income for farmers. At the same time, land reserves worldwide are limited, and ecologically valuable areas must be protected. Besides the promotion of the productivity of sustainable farming, additional measures are, therefore, necessary. In the first instance, these are binding sustainability standards and effective certification systems. The Federal Government aims for the establishment of appropriate sustainability criteria for biofuels at EU level. The Federal Government's goal is that the criteria embrace ecological and social aspects as well as the question of the competition for land, and that they apply to biomass as a whole. When applied to imports from third countries, conformity with WTO regulation must be guaranteed;
- However, where conflicts over use cannot be reconciled, the Federal Government takes the position that food security takes precedence over other uses of agricultural production. Biofuels of the second generation can contribute substantially to minimising the competition with foodstuffs, because of their ability to recycle residual materials. The transition to this generation of biofuels is, therefore, to be speeded up. Agricultural and energy research is to be observed over the total value chain, from plant breeding to the cultivation and harvesting of the agricultural products, through to the conversion, for example, into biofuels. Many steps in the transformation processes need to become more efficient (energy, emissions reduction) and should be combined as much as possible (multiple uses, cascading, and the biorefinery concept).
  The Federal Government regularly monitors its subsidies policy in the area of bioenergy, in order to review the goal achievements of the respective instruments and the observance of sustainability criteria as well as to react to technological developments;
- To promote the global policy of climate protection in order to prevent climate-related harvest losses. Here, international agreements for a post-Kyoto agreement are as indispensable as the implementation of national and European climate protection goals. The protection of biological diversity as a basis for all farming production must also be expedited worldwide. The Federal Government will use the German Presidency of the Convention on Biological Diversity (CBD) to accelerate international activities for security biodiversity, including agricultural biodiversity.
- To gear agricultural policy towards the markets: it is essential to achieve coherence with the other political areas, especially with regard to the global development goals and the goals of the WTO Round;
- To improve early warning systems. This is especially important in terms of being able to comprehensively prepare supporting measures that become urgently necessary in a more timely manner.

5. Conclusion

As an answer to the critical situation of feeding the world, a comprehensive, structured, and long-term coordinated strategy, one that must be agreed upon jointly by the states involved and international institutions, is necessary. The G8 Summit in July of 2008 in Japan once again underlined the necessity of a common policy. The United Nations especially should adopt an important leading role in this process.

In the long term, a global increase in food production—especially the production in developing countries—must be achieved. Sustainable farming and sustainable rural development must be accorded higher priority in the national policies of developing countries. The Federal Government will support this approach with all its weight in appropriate European and multilateral committees to which it belongs.

D Sustainability in Individual Additional Policy Areas

This chapter is structured in line with the topics of the new EU Sustainable Development Strategy of 2006 (cf. Chapter I). The following remarks summarise the main points of this Strategy and do not represent a comprehensive report of the Federal Government's variety of activities in these areas.

I. Sustainable transport

During the last few years in the discussion of sustainability, the main focus in the area of transport shifted from classical topics of environmental protection to challenges of climate protection (compare Chapter C.I.). This shift is—in view of the positive development in the reduction and prevention of classical air pollutants—justified (on the development of air pollution see indicator 13 in Chapter B). A permanent challenge in transport policy is, nevertheless, the reduction of transport noise. Moreover, transport also plays a negative role in land use (compare Chapter D.III.1, indicator 4 in Chapter B) and in fragmenting the landscape. The Federal Government adheres to its goal of decoupling economic growth from the demands of transport (compare indicators 11a and 11c), in order to reduce adverse effects on the environment. This is also a goal of the 2006 EU Strategy for Sustainable Development, a goal which is supported by measures that decouple economic growth and energy consumption. It is encouraging to observe that, despite increasing transport demand, the consumption of energy since 1999 in passenger and goods transport has declined. An efficient, competitive, and innovative mobility industry that organises economically- and ecologically-efficient transport flows and processes is an important prerequisite for growth and employment in Germany and the European Union.

1. Climate protection at the centre of sustainable transport policy

The transport systems of tomorrow should be quiet, clean, efficient, and climate friendly, and should use little land. With reference to climate protection, the aim is to reduce even further the CO_2 emissions produced by transport. The reinforced climate protection goal to be achieved by 2020 in the Integrated Energy and Climate Programme requires a substantial contribution from the transport sector. The Federal Government had already in the programme agreed upon a series of measures pertaining to transport. These included, among other things, an increase in CO_2 efficiency in the transport sector. In view of the forecasted increase in transport especially in goods transport, it is, however, obvious that a reduction of the specific energy consumption and CO_2 emissions through technical measures alone is not sufficient. The 'Freight Transport and Logistics Master Plan' includes important elements that support the contribution of transport to achieving the goal related to the reduction in CO_2 emissions.

Challenges and initial achievements

Today in the EU, 71% of total transport is dependent upon mineral oil—road transport's dependency actually approaches 97%. Traffic, therefore, contributes heavily to the use of energy reserves and, additionally, is responsible for about 20% of the total CO_2 emission in the EU.

Greenhouse gas emissions from transport derive chiefly from automobile traffic, road goods transport, and air transport. In view of the large growth rate, it is, moreover, necessary to tackle the possibilities of cutting greenhouse gas emissions in shipping transport, even if initially the reduction

of classical air pollution, especially sulphur, is most important in this sector. The Federal Government will continue, given this background, to be active in advocating the international emissions trade in air and shipping transport.

The challenges are immense, but there is no reason not to strive for a substantial contribution to reducing CO_2 emissions in transport.

That Germany is willing and able to reconcile the interests of mobility and environmental protection is shown by its successful reduction of air pollutants. By means of a step-by-step tightening of threshold values, a clear reduction of air pollutants was achieved at the same time as considerable increases in transport and miles travelled were reached. In the levels of nitrogen oxide, for example, Germany achieved a reduction of approximately 50% of nitrogen oxide in road traffic in 1990 figures; by 2010, the reduction will reach over 60% and by 2020 over 70%. The Federal Government supported this development, in addition, via promoting timely compliance with the future exhaust norms by offering tax incentives (automobile taxes dependent upon emissions). In this way, the introduction of modern automobiles causing lower pollution was considerably speeded up.

In CO_2 emissions, something comparable was also possible: Germany is the only country in the EU that has managed to reduce CO_2 emissions in the area of transport during the past eight years.

In its 'Fuel Strategy' developed within the framework of its Strategy for Sustainable Development, the Federal Government has provided a clear orientation for the next two decades in the area of energy efficiency and with regard to the broadening of the fuel base in transport that was expressed in the resolutions passed in Meseberg and their implementation. This applies to the demands for efficiency improvements in the drive systems as well as—supported by the *Deutsches BiomasseForschungsZentrum DBFZ* ('German Biomass Research Centre') among others—the future role of biofuels that needs to be examined in detail. Furthermore, the Fuel Strategy defines the continued support of innovative developments, such as the use of hydrogen and electric drive systems with fuel cells and batteries. This orientation is to be developed further in light of new activities and experiences.

Sustainable passenger transport

In individual traffic, it is not only because of increased fuel prices that a decoupling of transport performance and the consumption of energy has been initiated and the way towards more energy efficiency and 'away from oil' pursued. In the initial results, it has paid off that the double strategy in road traffic, consisting of the stimulus for greater energy efficiency and the visionary use of alternative fuels, coincided with clear improvement in the short-distance public transport service. With the Integrated Energy and Climate Programme of 5th December 2007, additional important decisions were made within this context (compare Chapter C.I.).

The planned establishment of CO_2 goals for newly registered automobiles in the EU as of 2012, nevertheless, represents in this context the most important decision for the future of energy efficiency and CO_2 reduction in Europe. Redesigning automobile taxation, more transparent and customer-friendly fuel-mileage labelling for automobiles, and improving framework conditions for the sustained use of biofuels will lead to an additional reduction of CO_2 emissions in passenger transport and to a clear increase in CO_2 efficiency.

At the same time, the Federal Government will continue its strategy of supporting the market preparation and market introduction of new technologies through which considerable improvements in energy efficiency can be achieved. This is an important element of an updated Fuel Strategy.

The 'National Hydrogen and Fuel Cell Technology Innovation Programme' (NIP) is currently in its implementation phase (please refer to *www.now-gmbh.de* for more information on this programme). Parallel to it, a national development plan 'Electromobility' is being elaborated upon (see Chapter C.I.).

The short-distance public transport service (SDPT) is being given an important role in the protection of the environment and the climate. It is a guarantee for securing a sustainable and modern mobility system and has a very high standing in the Federal Government's integrated transport policy. The Federal Government promotes SDPT by means of various financial instruments. Moreover, through research (for example, the research programme 'City Transport') and the promotion of best practice exchange, the Federal Government regularly supports municipal measures related to sustainable

city transport systems (such as,measures for a rapid modernisation of the vehicle fleet, creation of pedestrian zones and zones with a tempo limit of 30 km/hour, and establishment of comprehensive parking concepts). For many people living in rural areas, the SDPT is of vital importance.

In its importance as a means of transportation that is good for personal health, environmentally beneficial, and socially responsible, the bicycle is often underestimated. A goal of the 'National Cycling Plan 2002—2012' is, therefore, to demonstrate the opportunities for cycling traffic within the framework of an integrated traffic policy and to effectively use its potential for development within a traffic system that is oriented toward sustainability.

A bicycle makes mobility possible independent of the age or income of the rider, is inexpensive, environmentally friendly, beneficial to health, quiet, and takes up little physical space. Attractive cycling possibilities contribute to the improvement of the status of German tourism, especially in rural areas where the public transport infrastructure is weak. Support of cycling, moreover, secures jobs in the bicycle industry, in retailing, and in various parts of the service industry relevant to the bicycle. For this reason, the Federal Government advocates that *Länder* and municipalities recognise bicycle traffic as a means of transportation on a par with motorised individual and public transportation and, thus, integrate it into the development of traffic planning. In this way, the increase of the share of bicycle traffic in the modal split can contribute to the achievement of superordinate social and political goals such as climate protection and health promotion.

Sustainable goods transport

Because of its immense future growth in Germany and Europe, goods transport by road presents the largest challenge to the reduction of greenhouse gas emissions. Due to the high cost and energy efficiency of large diesel motors in lorries, the imaginable technological potentials for savings are limited and not quickly realisable.

Already today, road goods transport accounts for about one-third of the CO_2 emissions caused by road traffic. According to existing estimates, with conditions remaining the same, the increase in goods transport between 2004 and 2025 will be about 71%.

At the same time, it is clear that only when in the future goods transport can be managed in an economically, ecologically, and socially sustainable fashion, can sustainable passenger traffic be maintained. In a concerted traffic system, both are intimately related to each other.

For this reason, the Federal Government has taken the initiative to make sure, by means of an integrated 'Freight Transport and Logistics Master Plan' approach, that the conditions for a sustainable goods transport system are created.

Fields of activity in the 'Freight Transport and Logistics Master Plan'

The Master Plan focuses on the following fields of action in order to achieve an efficient, and simultaneously, a climatically and environmentally sound goods transport:

1. Our traffic routes must be used optimally. An intelligent and efficient traffic management using all the available modern information and communication media and traffic management processes must contribute to this system.
2. We must avoid traffic without restricting economic activity.
3. More freight traffic must be handled by rail and water.
4. The chief traffic-routes and traffic-nodes must be preferentially developed, for here, the greatest gains in efficiency can be achieved.
5. There must be additional incentives placed upon the use of technologies for an environment- and climate-friendly goods transport.
6. By means of additional training in the transportation industry, the people employed there must develop a consciousness with regard to the multiplicity of opportunities in contributing to more efficiency and sustainability in goods transport.

For this purpose, the Federal Government, together with the stakeholders from business, science, politics, and civil society, is developing a series of concrete proposals for action.

The measures incorporated in the Master Plan for prevention of traffic, for shifting of more goods transport onto rail and water, for efficient handling of goods transport, for optimised usage of the existing traffic routes as well as additional measures to alleviate road traffic, and above all, for strengthening the range of public transportation, serve simultaneously the goal of further reducing both the consumption of energy and the CO_2 emissions from traffic.

2. Noise control in the transport sector

Noise control in the public discussion of sustainable traffic does not yet play the role it merits when one considers its strategic and vital importance to the quality of our lives. The Federal

Government takes the issue very seriously and, for this reason, has developed a noise control package that lays the groundwork for increased noise protection in the transport sector. This package is now being consistently implemented.

a) Planning and administering noise prevention

The noise assessment procedures that are the basis for noise control measures are being updated.

- The technical work on rail traffic noise has been concluded; the legal implementation (amendment to the '16th Decree on the Implementation of the Federal Immission Control Act' *[BImSchV]*) will take place in the coming year. The new calculation procedure will more realistically describe current vehicle and carriageway designs, such as the fact that the noise sources of fast ICE trains are situated at a higher level.

- For the calculation procedure for road traffic noise, the potential financial effects of an updating are currently being determined. The subsequent technical work is extensive and requires a more extended period.

- The calculation procedures for air traffic are being revised on the basis of the amendment to the 'Air Traffic Noise Act'. The technical work here has been concluded and the legal implementation is in progress.

The individual vehicle must be made quieter. Noise reduction at the source makes elaborate noise reduction measures unnecessary, saves money, and works everywhere. The opportunity for a reduction of the noise limits is possible in the near future for lorries, automobiles, and their tires, as well as for motorcycles, since the corresponding guidelines of the United Nations Economic Commission for Europe (ECE) or the relevant EU directives are currently being reworked.

b) Noise reduction through technical innovation and research

For the reduction of noise in rail traffic, additional measures are being developed in one of the research projects supported by the Federal Government, *Leiser Zug auf realem Gleis* ('Quiet Train on the Actual Track'). The results should, as of 2011, make a continually increasing contribution to the reduction of noise of up to 3 decibels (A) by 2020.

For road traffic, a reduction of tire-pavement noise is being worked on.

In air traffic, the research programme *Leiser Flugverkehr 2* ('Quiet Air Traffic 2') was completed (among other things with the development of less noisy incoming and outgoing flights); the European research programme 'Clean Sky', which also deals with the problem of the reduction of air noise, will follow.

c) Noise decontamination, investments, noise control action plans

The noise decontamination funds for roads falling under the responsibility of the Federal Government *(Bundesstraßen)* are being considerably increased, to 50 million euros per year in order that the needs of reducing noise be more quickly expedited.

In the federal budget for 2008, funds in the amount of about 10 million euros for a pilot and innovations programme to reduce noise by retrofitting existing freight wagons were provided for the first time. A total of 40 million euros have additionally been set aside for the programme. The programme will be the kick-off for the equipping of existing freight wagons with lower-decibel technology and other business policy instruments providing finance to large corresponding projects.

In the area of aircraft noise, the amendment to the 'Air Traffic Noise Act' was put into effect on 7th June 2007 after a long preparatory period. The law guarantees security in planning for commercial airports. By means of a sizable tightening of the noise level limits, the introduction of a night protection area and the introduction of an *Außenwohnentschädigung* ('compensation for flight-path residents') correspond to the legitimate interests of the people who live in the vicinity of airports and require the protection the law affords.

Following the transposition of the Directive on Environmental Noise (2002/49/EC) into national law, its practical measures are now being enacted: the present noise mapping will put citizens in the position of being able to form an objective impression of the noise pollution to which they are subjected. The Federal Government has mapped the noise of the federal railways' tracks in this context, since these fall within its area of responsibility. Subsequently, the noise action planning of the respective responsible public authorities under the law of the *Länder* will develop measures toward a

progressive improvement of the local noise situation. Those affected are urged to take an active part in this planning within the framework of the public participation process.

The 'National Package of Transport Noise Protection' highlights the importance of the subject of noise reduction in transport policy. A summary agenda of the traffic noise control concept is a signal for all those affected to tackle the measures for resolving the problem in a concentrated and expeditious manner. This package provides a sound basis for a resolute approach in this important area of a sustainable transport policy.

II. Sustainable consumption, sustainable production, sustainable growth

1. Interactions between production and consumption

Sustainable development of society can not be achieved simply by state action, business initiatives or technological innovation. The consumption habits of customers determine to a high extent whether Germany will actually achieve its sustainable development goals. Thus for example more than 20% of greenhouse gas emissions in Germany are caused directly by private households.

'The consumer perspective is essential for the success of the Sustainability Strategy. The world environment report 'Geo 4' from the United Nations Environment Programme identifies excessive consumption as one of the most serious factors placing a strain on the global environment. This is connected with the fact that the consumer's power in structuring the globalised economy has grown enormously. Consumers today decide on the ecological compatibility of products and services and the living and working situations of people in Asia and Africa ...

At the same time favourable conditions are currently developing for steering consumption in a sustainable direction ... Consumers are increasingly recognising their responsibility and beginning to use it in terms of sustainable development as well. According to a study by the management consultancy company Ernst & Young, over 90% of consumers expect an ecologically and socially responsible offering from their retailers. If the retailers do not comply, over 90% of consumers want to change brands ...'

Federation of German Consumer Organisations, comment on the Progress Report, 27th June 2008

Individual consumer decisions add up to consumer trends which influence the market and can be more or less sustainable. Sustainable consumption can stimulate sustainable production and vice versa. An improved supply of, and an increasing demand for, goods and services which have a positive impact on sustainable development during their production and consumption, are mutually reinforcing and lead to environmentally-friendly sustainable growth. For sustainable development the Federal Government prefers measures which reinforce market mechanisms rather than state regulation.

2. Sustainable consumption—consumer and retail responsibility

The question of how consumers can increasingly incorporate aspects of sustainability into their daily decisions about what to buy is of great importance for the desired development towards more sustainable lifestyles overall. The broad public debate about global climate changes and energy prices has contributed to raising consumer awareness about the subject of sustainability. In their own interests consumers are increasingly making their buying decisions more dependent upon meaningful potential savings, both economically and ecologically.

In the midst of the era of globalisation is it important to mobilise the pronounced creative power of consumers on behalf of sustainable development.

The Federal Government's goal is to put instruments in the hands of consumers with which they can align their buying decisions with the criteria for sustainable development. Here the Federal Government supports numerous measures for increasing transparency for the consumer, whether in the areas of energy, food or capital investments. Alternatives need to be made clear to consumers by means of labelling and certification measures.

Examples of information tools

The **Blue Angel** is the oldest and best known environmental symbol in Germany. As well as environmental protection, health aspects are also taken into consideration to a large extent. Its product portfolio extends from recycled paper through mattresses and floor coverings to digital projectors. At present about 10,000 products bear the Blue Angel mark.

Further examples of the use of information tools are the **'Label-online"** project from the *Verbraucherinitiative e. V.* ('German Consumer Initiative') and the **'EcoTopTen'** from the *Öko-Institut e.V.* ('German institute for applied ecology'), which was established with the support of the Federal Government.

In this context the **Fairtrade mark** should also be mentioned, as sustainable consumption cannot be limited to Germany. This mark designates products which have been manufactured in compliance with international environmental and social standards, and for which the producers in developing countries have received a fair price. The products displaying the Fairtrade mark are primarily food, but an increasing number of other products are being included, for example fairly traded footballs and textiles.

Together with the German Sustainable Building Council, the Federal Government has created a German Certificate for Sustainable Buildings. This includes ecological, economic and socio-cultural aspects as well as calculations and planning for the evaluation initially of office and administrative buildings (new constructions). It also includes information about the location of the building. The seal of approval goes beyond the current international status of certification systems and can create international prestige for the high standards of sustainable construction in Germany. In addition, the necessary basic information and resources, together with up-to-date information on implementing the Sustainability Strategy in the construction sector, are provided on an Internet platform 'Sustainable Building': *www.nachhaltigesbauen.de* (in German only).

The implementation of sustainable models of consumption and production in industrial and developing countries is an important element of the Federal Government's National Strategy for Sustainable Development which also involves a global perspective (see also Chapter D.VI.). In order to be able to identify the causes which still conflict with sustainable consumption patterns, since 2006 the Federal Government has been financing a research project entitled *Vom Wissen zum Handeln – Neue Wege zum nachhaltigen Konsum* ('From knowledge to action—new routes to sustainable consumption').

The development of a sustainability indicator which resiliently represents the development in the consumer area is of central importance. This would make it easier for all the players involved to act in a focused way and enable consumers to orientate themselves better. A suitable sub-indicator in this context could, for example, measure the emissions of greenhouse gases per head for the purposes of private consumption. The Federal Government will examine the practicality and possible design of such an indicator in time for the next Progress Report.

At the interface between production and consumption, the retail sector plays a central role in encouraging sustainable consumption by including appropriate products in its offering. The Federal Government supports this through cooperation projects with commercial enterprises and environmental associations such as the project *Ökologischer Schulanfang* ('Starting School Ecologically') or measures under the *Bundesprogramm ökologischer Landbau* ('Federal Organic Farming Scheme').

In implementing sustainable consumption, governmental players also have an important role. The Federal Government, the *Länder* and municipalities spend large sums for goods, services and building contracts in order to fulfil their administrative duties and provide services for citizens. A public procurement policy oriented towards the criteria of sustainability is becoming increasingly more important in this context. Government authorities also have to live up to their function as a role model when implementing sustainable models of consumption and production. In addition this underscores the credibility of political decisions.

European public procurement law already highlights a large number of opportunities for taking account of social and environmental aspects when public contracts are awarded. In the context of the so-called first leg of the reform of national procurement law, which has already been passed, most of the regulations in this area have already been incorporated into German law. The so-called second leg of the procurement law reform, which is currently underway, is intended also to result in social and environmental criteria being considered by government authorities when carrying out public contracts. The Federal Government itself has already provided a good example here through the regulation of 17th January 2007, according to which wooden products purchased by the federal administration must have demonstrably originated from legal and sustainable forestry management (see Chapter C.II.2.e.), and also through the guidelines on the purchase of environmentally friendly and energy-efficient products adopted on 24th January 2008 in the context of the Integrated Energy and Climate Programme.

3. Sustainable production—the responsibility of companies

'For the German Council for Sustainable Development, unsolicited commitments by companies to society, to voluntary undertakings and to negotiated environmental agreements are an important feature of a sustainability policy. Alongside a proactive strategy for sustainable development on the part of the state, players from society and business are addressed above all when the issues of innovation for new markets and partnerships in responsibility are involved.

German Council for Sustainable Development, *'Unternehmerische Verantwortung in einer globalisierten Welt – Ein deutsches Profil der Corporate Social Responsibility'* ('Corporate responsibility in a globalised world—a German profile of corporate social responsibility'), Berlin 2006

In many companies in Germany, production processes which conserve resources, optimise energy and are low in emissions go hand in hand with a sense of responsibility which is exercised worldwide. Under the banner of corporate social responsibility

(CSR) more and more businesses are making the effort to actively fulfil their social obligations in Germany and the rest of the world through economically, ecologically and socially sustainable behaviour.

Companies have discovered that the goals and instruments of CSR offer them competitive advantages, and the concept of CSR provides them with a marketing argument (see, for example, *www.econsense.de; www.unternehmen-fuer-die-region.de; www.csrgermany.de*). Consumers are increasingly including CSR in their purchasing decisions. By accepting social responsibility and making it visible, you strengthen your position in the competitive environment. Instruments which used to be tailored more for major corporations are now increasingly being made available to small and medium-sized businesses as well.

The Federal Government advocates combining and encouraging the CSR activities of German companies and making them visible. Corporate social responsibility can make an important contribution to creating a society which is viable in the future. The Federal Government plans to develop a national CSR strategy in order to make the variety of activities more obvious, give them a more prominent place in public awareness and support the exchanges between players (stakeholders). The two-day conference 'Corporate Responsibility —A Net Gain for All' held at the end of April 2008 in Berlin formed the political prelude to this. Its goal was to enable an exchange between all the relevant players on objectives, fields of activity and instruments. The results of the conference flow directly into an ongoing research study *Corporate Social Responsibility zwischen Markt und Politik* ('CSR between Market and Politics'). The CSR activities of the Federal Government are also published on an Internet platform: *www.csrindeutschland.de*.

Over and above CSR activities, the Federal Government's goal is to further strengthen the impulse for the development of sustainable production processes, products and services. In this, market incentives take precedence over regulatory measures. Particularly in view of climate protection and the need to improve the efficiency of energy and raw material, a competitive market for innovations needs to be set in train. The top runners amongst products, in other words the most efficient products currently on the market, must be able to assert themselves more quickly. The Federal Government will further improve the statutory conditions with the energy and climate package which was approved in December 2007, for example through support for the European Top Runner approach to the increase in product efficiency.

4. Sustainable growth—the responsibility of companies, consumers and politics

The Federal Government's goal is to improve the outline conditions for sustained growth in Germany and the rest of the world, and thus also pay attention to the future opportunities of coming generations. As illustrated above (Chapter A.III.1.) this is one of the current challenges for the work of the Federal Government. This would not be possible without the adaptation of the social systems to demographic changes which has already been launched, the reduction in government debt and the further reduction in the demands placed upon the environment, for example through the reduction of land usage.

In a social and ecological market economy, sustainable growth is not achievable unless business and consumers are aware of their responsibilities. German business has occupied a leading role in this area for years, because without a continual increase in efficiency, for example in energy and resource consumption, in worldwide competition and also in relation to its most important stakeholders—employees, customers, capital investors and society—it could not survive. German companies lead the field in the manufacture of household appliances which conserve water and energy. In the food sector the supply of, and demand for, organic and fair trade products have been growing for a number of years. The Federal Government supports this orientation, for instance through the 'Renewable Energies Act' or the national eco label.

III. Maintaining and cultivating natural resources

1. Reducing land use

a) Starting point

The Federal Government's goal is to reduce the land being claimed for settlement and transport use to 30 hectares per day by 2020. This goal from the National Strategy for Sustainable Development 2002 was reinforced in the Coalition Agreement of 11th November 2005. The environment ministers of the *Länder* also endorsed this goal on 16th November 2007.

A first challenging work programme for a reduction in the area of land claimed for use was developed in the context of the 2004 Progress Report; impulses for this came from the German Council for Sustainable Development, which also further contributed to the subject through expert dialogues and a review of the effectiveness of its own position.

Recommendations of the German Council for Sustainable Development

In its recommendation *'More Value for Land Use: the 'Goal-30ha' for sustainability in City and Country'* in the 2004 Progress Report, the Council comments on the following points:
- new guiding principles for town and country
- new goal-management for the 30-hectare goal
- land recycling and honesty in planning
- taxes and subsidies
- additional measures by the Federal Government
- recommendation for a project for the continual dialogue on land use
- improvements in the statistical basis of information

A number of measures have already been implemented (among others, the elimination of the subsidy for house owners and improvement of the *Bodenschutzklausel* ('land conservation clause') in the Federal Construction Code. The amendment to the Federal Construction Code in support of inner development of cities came into force on 1st January 2007. However further measures are still urgently needed in order to reach the goal which has been set. Demographic change also favours a reduction in land use. Moreover, the inner development of towns and municipalities through upgrading the stock of housing and buildings plays an important role. The 2004 Progress Report already calls for 'the actual use of new land areas to be replaced largely by renewed usage of existing land' and thus for a land use cycle to be introduced by means of land recycling.

The use of land is still too high

When last assessed, the new use of land for settlement and transport stood at 113 hectares per day (trend 2003—2006). Without the use of effective instruments for implementing government policy on land usage on the Federal, *Länder* and municipal levels, the 30-hectare goal will not be achieved.

Chief originators

Of the 113 hectares of land claimed for use every day, 90 hectares are attributable to settlement areas (including 40 hectares for recreational areas, 20 of which per day come from the reclassification of former open-cast mines and military land as 'recreational areas'), and 23 hectares to transport areas. In 2005 in the former federal area new land was being claimed at a rate of 70 hectares per day, a return to the level of the late 1980s.

The increase in the land area used for transport has continued unabated since 1993 despite the declared goal. The settlement areas used by private households for living and recreation (including fruit and vegetable gardens and cemeteries) increased by 25% between 1996 and 2004 (+69 hectares per day), and thus increased considerably faster in percentage terms than the number of inhabitants (+2.8% between 1991 and 2003). A major reason is the distinct increase in land use per head of population for residential purposes. In East Germany in particular drastic catch-up development took place in the 1990s. Altogether the settlement areas used for residential purposes rose by 19% between 1992 and 2005. In contrast the change in the economic structure, away from manufacturing towards more use-intensive branches of the economy, led to less use for industrial areas. Completed construction projects for non-residential buildings and the consumption of land for non-residential areas have decreased considerably since the middle of the 1990s. Between 1996 and 2004, 35 hectares were claimed per day for the service sector, but only 25 hectares per day for the production areas of mining, the processing industries, energy and water, and building.

Decline in demand for construction land

Since as far back as 1993, the increase in actual settlement areas has been declining nationally. At 50 hectares per day between 2002 and 2005 (of which 43 are in the *Old* and seven in the *New Länder*) the rate of increase was clearly lower than between 1993 and 1996, when an increase of 82 hectares per day nationally was still recorded, of which 58 were in the *Old* and 24 in the *New Länder*. This line of development corresponds roughly to the cyclical development in the building industry. In the last few years there have also been considerably fewer new buildings completed as a consequence of demographic change, and the demand for building land has also clearly fallen accordingly. At the same time in the real estate market there is an increasing revival of demand for existing housing. If we extend the lines of the trend in terms of demographic change and the associated structural changes in housing construction into the future,

then a decrease in the new use of settlement land for housing is clearly evident. According to a model calculation based on the forecast for the residential market for 2020 by the German Federal Office for Building and Regional Planning *(BBR)*, the new consumption of settlement area for housing will decline to about 10 hectares and thereby contribute proportionally to achieving the goal of 30 hectares a day. A prerequisite, however, is that new occupants continue to be found for housing which becomes vacant in the future.

Waste settlement areas on the increase

Due to the fact that in the 1990s in many places in Germany more building plots were allocated for development than were needed in view of the stagnating population growth and cautious business activity, the amount of underused and waste areas in the stock of residential land has increased markedly since 1993. On the latest count this amounted to at least 150,000 hectares, of which approximately 114,000 hectares were in the *Old Länder*, and more than 36,000 hectares were in the *New Länder* and in Berlin.

The amount of waste settlement land in the East German and former industrialised regions and those affected by conversion is similarly great. Correspondingly, amongst the municipalities questioned in the regular building land survey by the Federal Office for Building and Regional Planning, the proportion of waste land in the stock of commercial construction land in 2004/2005 already stood at 52%, compared to only 27% in 1998/1999.

Realistic prospects of reuse for residential or commercial purposes in the near future exist for only a part of this land, chiefly in today's growth regions. Otherwise at best interim use can be achieved, which will not burden municipalities and owners financially and will contribute as well as possible to improving the appearance of towns—if hope of using this land is not finally given up.

Continuing high environmental pollution

With a 13% share of settlement and transport area in 2006 (with high regional variations) Germany is among the most densely populated European countries. Throughout the country at the end of 2006 approximately 46% of the settlement and transport areas were sealed, with an estimated 43 new hectares per day being sealed between 2000 and 2006.

The growth of settlement and transport areas leads to an increasing division and fragmentation of the landscape, with negative effects on the various protective and social functions (for example, biodiversity, recreation and so on) and equally for agricultural and forestry use. The number of transport areas which have not been cut up and have a surface area larger than 100 km^2 dwindled in the five years between 1998 and 2003 from 480 to 422. In addition, the growth of the areas allocated for transport creates noise and emissions of pollutants.

New settlement areas are integrated into the existing settlement areas only to a limited degree. Only a quarter of the borders of new settlement areas directly adjoin the existing settlement areas. In agglomeration areas, the empty areas near to the city centres are under considerable pressure. At the same time the intensity of use of the new settlement areas differs by region; it is comparatively high in the southern and western *Länder*. The dynamics of the settlement activities are also high in the landscapes which are worthy of protection.

Costs of land loss and urban sprawl

The most disturbing trend in the use of land in economic and social terms is urban sprawl, especially in rural areas. This process, which has been in existence for decades, has increased in recent years because of demographic developments. This has led to an increasing under-utilisation of infrastructures. The expenditures per head of population and the costs of the technical infrastructure, for example for sewage disposal, are significantly higher in less densely populated areas than in more densely populated areas. New residential areas also develop far away from train stations or other access to public transportation by rail. Through increased urban sprawl, sometimes in combination with a shrinking population, the profitability of public transport falls due to the lower concentration of users. The result is that service quality often has to be reduced, and dependence upon motorised private transport increases. With the amendment to the Federal Construction Code *(BauGB)* which came into force on 1st January 2007 with the aim of reinforcing inner development, the legislature has improved the body of instruments available to municipalities for counteracting such developments.

To a substantial extent, the expansion of settlement and transport areas takes place at the cost of land with higher natural earning potential. This land makes up only 18% of the total land area of Germany. A third of

the total land claimed for settlement and transport between 1996 and 2000 came from this land. In this way these areas were lost forever for the production of food and animal feedstuffs, energy plants and renewable raw materials.

b) Activities since the 2004 Progress Report

REFINA

In October 2004, the Federal Government published guidelines for the action-oriented research focus 'Research for the Reduction of Land Consumption and for Sustainable Land Management' *(REFINA)*.

From the more than 300 proposed projects with which more than 1,000 scientific institutions, municipalities and businesses were involved following the challenge to develop ideas, a total of 116 projects started work at the beginning of 2006: the activities were supported by the Federal Government with over 22 million euros. 37 small or medium-sized companies, 32 scientific institutions and 16 municipalities and regional associations, together with various other organisations (including environmental groups) set themselves the task of preparing innovative solutions and demonstrating them regionally as examples of land conservation worthy of imitation. Over 90 municipalities are involved in the projects. *REFINA* is characterised by the networking of experts from a wide variety of fields and practical partners from the municipalities and regions. Through cross-sectional working groups and annual status seminars, professional exchange and the transfer of results are accelerated. The important aspect of communication and awareness raising is an integral ingredient of *REFINA*. The networks mentioned below provide a first impression of the main research topics (additional information at *www.refina-info.de*).

***REFINA* project networks:**

• Model concepts for regional cooperation
The *KomReg* project network is preparing a decision-making aid for the region around Freiburg to be used in controlling land usage and reducing the costs of land usage. In the Balve-Hemer-Iserlohn-Menden region the *Städtenetzwerk* ('town network') project association is designing an inter-municipality commercial land development strategy. The *Regionaler Gewerbeflächenpool Neckar-Alb* ('Neckar-Alb Regional Industrial Area Pool') (*'Regena'* project network in collaboration with the Neckar-Alb regional association and the participation of more than ten municipalities) is designed to support better control of the regional public and private use of land.

• Economic concepts
The *Nachhaltiges Flächenmanagement* ('Sustainable Land-Use Management') project network is investigating the opportunities for the city of Hanover to mobilise private capital for the development of areas of wasteland in the inner city. Through a funding model organised by private business, the pace of recycling the wasteland will be greatly increased and the strain will be taken off public finances. The *Nutzungszyklusmanagement* ('Use Cycle Management') project network is working out an exemplary management system for municipalities and housing societies, by means of which efficient use cycles for inner city residential accommodation can be identified taking account of the social, ecological and economic conditions of the location.

• Innovative instruments
In the LEAN² project network a practicable instrument is going to be developed which will show the effects of planning decisions on municipal budgets and provide a basis for evaluating the advantages and disadvantages based on the actual facts. In the DORIF project network, innovative ways are being sought for the municipalities to be able to achieve the regional planning goals of the *Länder* and the regions on an efficient and proportionate basis using tradable land identification certificates, and thus preserve considerable room for manoeuvre.

• Shrinking regions
Given the conditions of economic and demographic change, it is necessary to re-think land use nationally. For this purpose the *KoReMi* project network is developing innovative action strategies for cooperative regional land management between *Länder* on the basis of the Halle-Leipzig model regions. The *Flächenkonstanz Saar* ('Land Stability Saar') project network has taken the Saar region as an example and is for the first time working out a concept of zero growth when new land is claimed for use.

• Conversion, land recycling
The *Gläserne Konversion* ('Transparent Conversion') project network is examining on an exemplary basis how, disused military bases in the Barntorf-Fürstenau region (Lower Saxony) can be put to use with the involvement of all the players affected, and thus save on building land. The 'Sinbra' project network is developing scientific bases for evaluating the risks and developing the land of military properties, taking as an example a former Red Army base in Potsdam-Krampnitz. The research work on such conversions is being supported by the *Universität der Bundeswehr* ('Federal Armed Forces University'). The 'Optirisk' project network is working on a new method for developing contaminated land.

• Awareness raising, communication
Questions of the scientifically founded evaluation of soil and land in towns, along with more efficient use of remote exploration methods by means of new sensor and evaluation techniques, are being investigated by the *Flächenbarometer* ('Land Use Barometer') project network which includes Leipzig, Dresden, the Koblenz regional association and the planning association *Äußerer Wirtschaftsraum München* ['Munich outer economic area']). The *3-D-Stadtmodelle* ('3-D City Model') project network is taking city districts in Berlin/Potsdam as an example, and preparing new municipal communication and decision-making platforms in the form of three-dimensional models of cities and urban areas, which can be used to visualise the risks and side effects of decisions. The goal of the project *Entscheidungssystem zur Abschätzung des langfristigen Infrastruktur- und Flächenbedarfes* ('Decision-making system for assessing long-term requirements for infrastructure and land use') is the development of a test grid (a sustainability check) for sustainable infrastructure and land-use planning against the background of demographic changes. The instrument is designed to function as a decision-making aid for players, which can be used to make it easier to formulate goals whilst taking account of relevant indicators together with priorities and alternative courses of action.

In order to support the research work and enable rapid transfer of results, an advisory board has been set up within *REFINA* whose members are not only representatives of the Federal Government, but also experts from the Federal states of Bavaria, Baden-Württemberg, Lower Saxony and North Rhine-Westphalia, the municipal organisations, the German Council for Sustainable Development and the *Ingenieurtechnischer Verband Altlasten* ('German Association of Technical Engineering for Contaminated Land'). The results of *REFINA* will be published in a series of documents which will be made available free of charge not only for work in municipalities and regions, but also to all interested citizens. The Federal Government will evaluate the results of the *REFINA* project and together with the *Länder* it will draw further conclusions for the creation of legal and economic outline conditions for the support of land conservation throughout the Federal Republic.

Urban development research, experimental residential and urban development

Since the 2004 Progress Report, a number of research projects have been carried out by the Federation Government on land management and the reduction of new land use (further information at *www.bbr.bund.de/Forschungsprogramme*).

Sustainability barometer of urban land use

The 2004 Progress Report called for the recording of quantitative and qualitative aspects of new land use to continue to be developed. For this purpose, a system of indicators for determining and updating the sustainability of the goals of land use policy has been developed in the form of the 'sustainability barometer of urban land use'. This serves as an instrument of information and evaluation to support political decision-making and evaluate policies for regulating new land use for settlements and transport.

Land in a cycle

The strategic approach to future urban development must involve circular land use management. This entails systematic management of land resources on the principle 'Avoid—Recycle—Compensate' with priority being given to mobilising the potential of land in the urban regions. When adapted to the particular region, it is appropriate as a conversion strategy for regions which are shrinking, and also as a guidance and limitation strategy for regions which are expanding.

Research area 'Circular land use'

In the context of the research area *Fläche im Kreis* ('Land in a cycle—Circular land use management in cities and urban regions'), bases for circular management of land use have been developed, more than 50 existing and new instruments have been systematised and have been tested by means of simulation games in five regions of the country, in order to assess their ability to achieve particular goals, their feasibility and acceptability.
The conclusion is that the available instruments will already enable rapid entry into circular land use management.
This would be made easier in particular through additional information on land potential being made available, the reinforcement of regional planning, improved cooperation processes in which interests and finances are balanced out regionally, sufficient personnel, marketable development concepts for areas which offer potential, and also by means of opportunities for financing interim use and renaturation.
In order to achieve rapid and long-term implementation of circular land use management, the regions in which the simulation games took place advocated a mix of policies which includes market-based instruments. The preferred options included a cost-benefit analysis in order to account for the investment and long-term costs of earmarking new sites, funds for mobilising small-scale wasteland areas, soft loans for the development of existing sites, specific allocations within the context of municipal equalisation transfers and also a charge for earmarking land for development purposes. Some of these recommendations are being taken up in projects by the *REFINA* funding focus (see above).
The results of the research area will now be disseminated, particularly in a dialogue with *Länder*, regions and community representatives. They are documented in numerous publications (cf. *www.flaeche-im-kreis.de*).

Model project 'Sustainable settlement development'

The model project *Nachhaltige Siedlungsentwicklung* ('Sustainable Settlement Development') (2004–2006) was designed to develop creative, practical and acceptable approaches to counteract the further increased use of land for settlement purposes.

Model projects

- *Nachhaltiges regionales Siedlungsflächenmanagement* ('Sustainable Regional Land Management') (Stuttgart Region Association) MORO-RESIM
- City hinterland regions in Western Pomerania for the cooperative development of regional settlement concepts and their legally binding implementation
- Integration of 'economic' steering instruments for land policy in the regional planning and finance system of Baden-Württemberg ('Rhine-Neckar-Odenwald Regional Association')
- 'Qualities of life in central Thuringia—new strategies and alliances in the regional conversion process': approaches to resource conservation during residential settlement development in East Germany and its implementation in regional planning
- Further development of integrated regional land

management in the Chemnitz-Zwickau economic region
- Inter-municipality management of industrial and compensation land areas in the Jade-Weser area (county of Friesland)
- Inter-regional reconciliation of interests and sustainable development of settlement and land use, taking as an example regional development planning in the municipality of Fockbek, in the residential and economic area of Rendsburg: regional equalisation payments in the context of regional land management

The focus was on both the further development of integrated approaches to regional land management and also, for example, new economic incentive instruments for land conservation and their links to planning processes.

Research programme 'Development in the East'

In the research programme *Aufbau Ost* ('Development in the East') several projects were specifically dedicated to questions of location development, including land recycling in suburban areas, and also to questions of interim use, monitoring commercial land and land recycling from the players' perspective. At a specialist event supported by several federal ministries and involving more than 170 practitioners, politicians and experts in Freiberg (Saxony) in September 2005, instruments, guidelines and decision-making aids on land recycling in urban renewal regions were presented and discussed; the contents have been documented in a reference book.

Other research activities

The German Federal Environment Agency and the Federal Agency for Nature Conservation have also been active in sponsoring relevant research projects:

Subject of the Federal Environment Agency/Federal Agency for Nature Conservation projects

- Optimising the effectiveness of nature conservation legislation and legislation on overall regional planning, as well as environmentally relevant sector planning in support of land conservation in settlement development
- Costs and benefits of settlement development; advantages and disadvantages from the perspectives of different players
- Further development of economic instruments for funding sustainable economic and reform options in the context of the joint task of improving the regional economic structure
- Demographic change in cities and regions and development strategies from an environmental perspective
- Development of new instruments for benefit sharing between municipalities or regions, especially trading in certificates for earmarking land for development
- Sustainable regional land resource management—integration of land into the economic cycle taking the wasteland belonging to the *Deutsche Bahn AG*, as an example
- Recommendations on the maintenance and evaluation of sealed surfaces, and on the preservation and restoration of the productive capacity of the soil

Instruments

The achievement of the 30-hectare goal in the practice of urban development is in fact primarily a matter for the *Länder* and the municipalities. The Federal Government is, however, active in providing support through the programmes for funding urban development which are geared towards the inner development of towns and municipalities, through research programmes and last but not least through legislative measures.

The point of departure in the legislative area is the urban development policy approach in the *Europarechtsanpassungsgesetz Bau* (2004) ('Law on the adaptation of the German Construction Code to EU law')—with the emphasis on inner development and improvement of the 'land conservation clause'. In this context the amendment of urban development legislation in 2007 (*Gesetz zur Erleichterung von Planungsvorhaben für die Innenentwicklung der Städte* ('Act for the facilitation of planning projects for inner urban development', in force since 1st January 2007) makes the practice of planning in cities and municipalities considerably easier and faster. The new §13a of the Construction Code enables the municipalities to choose an accelerated process for specific building plans for inner urban development. By this means the inner cities are to be given a location advantage over greenfield sites and more investment is to be diverted to the inner cities.

Support for village renewal in the context of the *Gemeinschaftsaufgabe Verbesserung der Agrarstruktur und des Küstenschutzes (GAK)* ('Joint Task for the Improvement of Agricultural Structures and Coastal Protection') is making a contribution to stimulating the development of inner village areas and thus to reducing land usage outside the areas used for settlements up to now. But the goal of reducing the use of land has found its way into legislation in other legal areas too.

Examples of regulations in other areas

Gesetz zur Schaffung deutscher Immobilien-Aktiengesellschaften mit börsenotierten Anteilen **('Act for the Creation of German Real Estate Stock Corporations with Publicly Listed Shares')**
By means of this Act, during the introduction of REITs (Real Estate Investment Trusts) into income tax law, a tax concession limited to the period 2007 to 2009 was

introduced for the profit from the sales of property and buildings to a REIT or a pre-REIT company. This applies to sales transactions in the factory sector. In particular from the perspective of the reuse of wasteland, it is of interest that in the case of the sales of building plots which are being promoted factory premises which are no longer needed can also be involved.

Home owner's allowance
The abolition of this allowance had been demanded for a long time, amongst other things due to the need for economical treatment of land and the dismantling of failed subsidies for residential construction, especially in greenfield areas. This allowance was abolished as of 1st January 2006.

In the case of new and expanded federal transport routes, various measures also support the goal of reducing land use, such as the bundling of transport routes used by various means of transport, the reduction of railway carriageway widths in appropriate cases, the optimisation of routing and the complete dismantling of transport facilities. Through the use of modern transport guidance and safety technology, the performance of the existing transport infrastructure is being increased and the need for new construction and expansion is being reduced.

c) Perspectives

Urban development funding

In the area of funding for urban development, the focal points for the use of financial aid have already been defined since 1998 as, amongst others, the reinforcement of inner cities and district centres, the reuse of wasteland and of construction methods which save on land use (§164b Section 2 of the Federal Construction Code). The Federal Government and the *Länder* have placed even greater emphasis on these points as from the programme year 2008. Under the programme *Aktive Stadt- und Ortsteilzentren* ('Active city and district centres'), in order primarily to reinforce inner development, above all central service areas in city and district centres are to be enhanced in terms of their attractiveness by raising their profile and upgrading them. Activities which qualify for funding include, for example, the restoration of empty buildings to a usable condition. In this way financial support will be added to the legal instruments contained in the 2007 amendment to urban development legislation.

Raumordnungsgesetz ('Spatial Planning Act')

In keeping with its significance in the Strategy for Sustainable Development, the amendment of the Spatial Planning Act, whose completion is anticipated for the end of 2008, also emphasises the goal of decreasing the amount of land being claimed for use and reusing existing wasteland. The higher levels of the planning structure in the *Länder*, and above all the *Land* and regional planning authorities, have to accept responsibility for achieving this goal.

Cost-benefit analyses

In the 'land in a cycle' research project (see above) it has become clear that cost-benefit analyses have been useful to municipalities in terms of earmarking greenfield sites for development purposes and new construction in the inner city on wasteland/empty sites. Up till now findings in respect of methodology and content have been lacking. In order to achieve the most practicable assistance possible for the municipalities, this approach needs to be further developed in the current research projects *(REFINA)*. At the same time charges for earmarking land for development purposes or fees for site developments are being discussed, which will make the new use of land on greenfield sites more expensive and thereby more difficult in comparison to recycling wasteland.

Real estate funds

It can also be appropriate to use real estate funds to mobilise amongst others areas of wasteland which are not marketable on their own. Here in the context of the EU initiative JESSICA ('Joint European Support for Sustainable Investment in City Areas') since 2007, money from European structural funds has been available for use in providing economic incentives for the reuse of wastelands and empty sites, for example with soft loans, equity capital or guarantees.

At an informal meeting of ministers on the subject of city development and territorial cohesion held on 24th/25th May 2007, in Leipzig, the member states recognised the necessity of giving increased consideration to new forms of financing in urban development. The questions which exist in connection with establishing urban development funds in the context of the JESSICA initiative are being clarified within an international working group under German leadership.

Awareness raising

Problems of land use must also be brought more strongly to people's awareness. This is where special significance is attached to projects such as:

- 'Living 2010: *Flächensparen – Natur erhalten*' ('Conserve Land—Preserve Nature') (public awareness campaign by the German Nature and Biodiversity Conservation Union: *NABU*) on the ecological, economic and social risks of the continuing growth of settlement and transport areas)
- Publication of teaching materials for teachers on the subject of land use and landscape fragmentation
- A joint position paper from the environmental authorities, environmental associations and German Farmers' Union on the reduction of land use for settlement and transport *Entsiegelung bei Neuversiegelung – Eingriffsregelung optimiert anwenden* ('Reducing impervious surfaces while resealing ground—optimal application of the regulation on intervention').

Land use is a creeping phenomenon which is scarcely perceptible to most citizens, or even to many municipal decision makers. This is because the problem is not the individual new project, but rather the totality of projects in different places far away from each other. For this reason the extent of the problem is sometimes not sufficiently recognised by planners and decision makers, as well as by citizens.

As a result it can be difficult in practice to consistently apply the effective instruments which already exist, to counteract failed economic incentives or to politically enforce the implementation of additional instruments. This can be seen, for example, in the discussions of measures in planning law, in the home owners' allowance as well as in the context of the binding regional and municipal goals for land conservation. A greater social awareness of the problem is therefore important in order to create acceptance for effective measures. Regularly recording the locally and regionally available reserves of developed building land which have been opened up, empty building sites and wasteland, and presenting them to the public, raises awareness of the problem and increases acceptance of the necessary measures.

Sustainability impact assessment when making infrastructure investments

A central starting point for introducing a change of thinking in both shrinkage areas and growth regions is the relationship between the costs and benefits of settlement development. Here the implementation of sustainability impact assessments when making infrastructure investments can also make a contribution, as is planned by the Federal Government. This includes an effective coupling of programmes and measures for the promotion of social and technical infrastructure with resilient medium- and long-term demand forecasts, as well as regional development concepts, so that programmes and plans can be more efficiently coordinated. As a result the construction of unnecessary or incorrectly dimensioned infrastructure can be avoided and the use of land reduced; at the same time the overall costs of the infrastructure can be reduced. The Federal Government is currently developing proposals for a sustainability assessment of this kind.

Activities by the *Länder*, municipalities and the German Council for Sustainable Development

A series of best-practice examples show that in some regions the problem of excessive land use is already being counteracted. Economic structural discontinuities, migration, the ageing and reduction of the population and the financial situation of the public authorities make new approaches essential. Urban sprawl is also a problem from the perspective of financial policy. In the *Länder*, therefore, regional planning policy and intensified control of the development of settlement and infrastructure are increasingly on the political agenda. From the perspective of the Federal Government, importance is thus attached, for example, to evaluating the experience gained by the *Länder* in specifying quantifiable target values for the reduction of land use.

This point of view was reinforced by the Federal Government in the National Strategy on Biodiversity in November 2007. It is now the responsibility of the *Länder*, the regions and the municipalities to develop region- and district-specific goals for the reduction of land use by 2015. The Federal Government will do what lies within its powers to support efforts for increased inner development through urban development aid and for improved outline conditions for the upgrading of existing settlements. This involves programmes for the energy-efficient modernisation of buildings, the further dismantling of failed economic incentives by means of grants,

together with collaboration on the optimal design of other statutory conditions. In this context, for example, the advantages and disadvantages of the suggestion made by the municipal umbrella organisations for a zoned municipal law on property tax can be further discussed in the long term with the *Länder*.

The dialogue process of the German Council for Sustainable Development on the use of land has confirmed that awareness of the problem on the municipal level is increasing. The first concrete activities to be observed are mainly among those municipalities which are particularly affected by the reduction and ageing of the population. It is not only the non-governmental organisations which are pushing this subject more to the forefront of their work. The media are also paying attention to the questions associated with it, for example, falling property prices in some regions, the possible consequences for old-age insurance of private owners or the solvency of companies, the financial situations of *Länder* and municipalities, and the new regional development trends.

The Federal Government will continue to collaborate with model municipalities, *Länder* and social groups and will implement a large variety of public relations and awareness raising activities of its own in relation to the reduction of land use.

d) Conclusion

Demographic change, migration and changes in the economic structure will in the future push the dimension of new areas of land being claimed for settlements and transport even more intensively into the public domain. Consolidation instead of urban sprawl is economically, culturally, socially and ecologically necessary, and is increasingly required on the grounds of climate policy as well. Climate-friendly construction—wherever new building is necessary—presupposes compact and denser settlement structures. Compact settlement structures are necessary, for example, in order to be able to operate local and long-distance heating networks profitably. This applies as much to growth regions as it does to urban redevelopment regions.

The revitalisation of the areas of potential use which are increasingly disused or derelict land is an important prerequisite for reducing the amount of land being claimed for use. At the same time, using the development potential inherent in derelict land is the deciding challenge for the revitalisation of the inner cities. Land recycling is ecologically necessary, economically sensible and socially responsible; it is the central building block in a sustainable policy on the use of land for settlement.

The Federal Government will continue to analyse the forces driving the use of land as well as the obstacles to the revitalisation of derelict settlement areas. It will bring together and evaluate the various measures aimed at reducing land use, and derive additional effective measures from these. In order to be able to achieve the goal of reducing land use, the continuous removal of economic incentives for land use is essential. Therefore above all the economic outline conditions established by the State which currently encourage, directly or indirectly, the use of land will be examined critically. The experiences of the municipalities and *Länder* must be comprehensively evaluated together with the scientific results in the context of *REFINA* in the course of developing both supply and demand side strategies for action. At the same time new economic instruments for the reduction of land use must also be examined and tested in pilot projects.

The Federal Government will continue the dialogue with all the relevant players in order to support the design and implementation of measures. The Federal Government will in particular strengthen regional planning authority in collaboration with the *Länder* and the municipalities, and advocate the dissemination of the planning culture in the spirit of sustainability. The Federal Government welcomes the offer by the *Länder* (see Chapter G.III.) to incorporate their experience of the various planning, legal and fiscal instruments in the deliberations of the Federal Government.

2. Biodiversity

Biodiversity is a central basis of human life on earth. It is also a heritage which we must handle carefully in the interests of coming generations and also on the basis of the intrinsic value of nature.

There are many different reasons for its conservation. They include a better capacity for adapting to changing environmental conditions (for example, in view of global climate change). Through technological development following the model of nature, future growth markets of the future can be opened up (keyword: bionics). Biodiversity is the basis for the essential achievements of the ecosystem, such as the self-purifying capacity of bodies of water, the purification of air by means of the filtering capacity of plants, or natural soil fertility. Today many branches of

industry and jobs in agriculture and forestry, fisheries, tourism, the food industry, and the healthcare system already depend upon an intact and versatile natural environment and its sustainable use. Many aspects of the way we experience nature, in terms of aesthetics, education, leisure activities and also our sense of home and the quality of life within our residential environment, as well as ethical reasons, all speak for the sustainable safeguarding of biological diversity.

Effective protection of biodiversity becomes easier when it finds broad support in society, especially when there are economic prospects for the sustainable use of biodiversity. This conclusion was also drawn within the central topic 'Biodiversity—Protection and utilisation' in the 'Landmark Sustainability 2005'.

The most important causes of the decline in biological diversity are urban sprawl and the sealing of the landscape for transport, housing and business use, non-sustainable forms of land use, the drainage and structuring of natural water courses, the overuse of fishery resources, depositing of materials and climate change. As in most countries in Europe, the diversity of species in the agricultural land sub-sector declined especially strongly between 1970 and 1990. However, since 1990 the decline in agricultural land, as well as in the habitats, forests and coastal regions/oceans, has been halted in Germany. Since the end of the 1980s the variety of species in German forests has increased again (more deciduous and mixed forests, a mix of ages, a large amount of mature timber and dead wood). The improvement in the water quality of many rivers and lakes in the last few decades has likewise proved beneficial for the preservation of biological diversity.

Indicator 5 'Species diversity and landscape quality' (Chapter B) makes it clear that the positive developments mentioned in the sub-categories have not yet led to a sufficient mitigation of the situation of biological diversity overall in Germany, which is characterised by burdens and risks. The indicator shows no verifiable development trend for 1997 and 2006, and only the sub-indicator for forests displays a positive trend.

a) Activities

On the international level, under a series of international agreements, the Federal Government advocates protecting the diversity of species and their habitats, and supporting the sustainability of their use. Of central importance here above everything else is the Convention on Biological Diversity (CBD) which was agreed in 1992 in Rio de Janeiro. In accordance with the CBD, the international agreement on plant genetics resources for nutrition and farming concerns the conservation and sustainable use of this sector. In addition, the Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Bonn Convention on the Conservation of Migratory Species of Wild Animals (CMS), and the Ramsar Convention on Wetlands, especially as habitats for water birds and waders, are all to do with worldwide protection of biodiversity. As well as its activities in the context of the global conventions, the Federal Government supports numerous measures for the conservation and sustainable use of biological diversity in partner countries in the context of bi- and multilateral contributions (for example, the Global Environmental Facility—GEF). The Federal Government will use these processes intensively and develop them further.

From 19th to 30th May 2008, under the motto *Eine Natur – eine Welt – unsere Zukunft* ('One Nature—One World—Our Future'), Germany hosted the Ninth Meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD) in Bonn. Only two years remain to move closer to the goal established by the community of states in Johannesburg in 2002 of significantly reducing the worldwide loss of biological diversity by 2010. Thus the expectations which were pinned on the results of this United Nations conference were correspondingly large.

The agreements finally reached in Bonn are a great success for the international policy on biodiversity. Success was achieved in breathing new life into the discussion of measures to counteract the worldwide loss of biodiversity, and in reaching agreement on questions which previously had proved extremely controversial.

Thus the Bonn meeting succeeded in signing off the 'Bonn Mandate' for negotiations on the further approach in respect of the acquisition of genetic resources and the fair distribution of the advantages derived from the use of resources ('Access and Benefit Sharing'—ABS). This mandate includes a rigorous schedule for the next two years in order to be able to agree upon a so-called International ABS Regime at the Tenth Meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD) in Japan.

Great progress was also made in marine nature conservation, for which scientific criteria for the choice of marine nature conservation areas were

agreed upon. Although a global network of marine nature conservation areas occupies a key role in the protection of the oceans, only 1% of the ocean surface is protected at present.

Finally, with the 'Life Web Initiative' the Federal Government has implemented an instrument for achieving the goal of setting up a worldwide network of protected areas. The 'Life Web Initiative' creates a platform on which donors and recipients can be brought into contact with each other in the sphere of activities involving protected areas. With this initiative the world community will be invited to register proposals for new or under-financed protected areas and to obtain preferential finance for such areas. Germany itself will additionally make 500 million euros available for international protection between 2009 and 2012, and 500 million euros per year from 2013.

In the run-up to the conference the Federal Government also used its G8 Presidency in 2007 to place biodiversity on the G8 agenda as a topic in its own right. In addition the 'Potsdam Initiative' agreed at the G8+5 environment ministers conference in March 2007, and the concrete joint activities included in it for the protection and sustainable use of biodiversity, will be continuously driven forward. As one of the first results, an interim report was presented at the 2008 CBD in Bonn which examined the costs to the national economy of the destruction of nature and the worldwide loss of the benefits of ecosystems

b) National Strategy on Biological Diversity

In order to halt the decline in biodiversity in Germany and at the same time to better harmonise the interests in protection and use, on 7th November 2007 the Federal Government passed a National Strategy on Biodiversity. Thus for the first time in Germany a comprehensive and demanding strategy exists for the implementation of the UN Convention on Biological Diversity (Article 6 of the CBD).

The National Strategy formulates guidelines and suggested goals; these are made specific through measures which call for the various governmental and non-governmental players on all levels to take action. At the same time the Strategy also takes account of the effects of German activities on biodiversity worldwide. Once in each legislative period the Federal Government will present a report on the achievement of the objectives. Indicators will be used with the aims of summary monitoring of success.

Selected goals of the National Strategy on Biological Diversity

Protection of biodiversity

- By 2010 the proportion of species which are threatened with extinction or severely jeopardised will be reduced. By 2020 species for whose preservation Germany carries a special responsibility will achieve viable populations. By 2020 the hazardous situation of the largest proportion of the red list of endangered species will have improved by one step.
- By 2020 nature will be able once again to develop undisturbed and return to wilderness in accordance with its own laws in 2% of the area of Germany.
- In 2020 the proportion of the forest area with natural forest development will constitute 5% of the total forest area.
- By 2015 the proportion of the area containing valuable agricultural biotopes worthy of conservation (high-grade grasslands, meadows with fruit trees) will have increased by 10% compared to 2005. In 2010 in agriculturally used areas the proportion of landscape elements which are close to nature (for example, hedges, balks, clumps of trees, small areas of water) will be at least 5%.
- The current percentage of areas greater than 100 km^2 which have not been split up and are subject to only light traffic will remain the same.
- By 2020 the natural CO_2 storage capacity of rural habitats (for example, through re-irrigation and renaturation of swamps and through the increase in woodland which is close to nature) will have increased by 10%.
- By 2008 development on a national level of a list of the species which are urgently in need of protection by ex situ measures; presentation of a species-specific, ex situ programme in consultation with the *Länder* and implementation for 25% of the species by 2010.
- Development of a strategy for exemplary consideration of the biological diversity issues for all land areas within the public domain by 2010.

Sustainable use of biodiversity

- More pronounced orientation of control and funding policy towards the preservation of biological diversity
- By 2020 an exemplary procurement and construction body is to be sought which in respect of natural and environmental friendliness is oriented towards standards for preserving biodiversity.
- Biodiversity to be increasingly taken into account in environmental management and certification systems and communicating them better
- By 2010 development of an integrative strategy for increasing agricultural biodiversity and establishing the appropriate advisory, financial and monitoring instruments for this by 2015
- By 2020 some 25% of the imported natural materials and products (for example, agricultural, forestry, fishery products, medical, aromatic and hobby plants and hobby animals) will be derived from naturally and socially responsible use.
- At the latest from 2010 no imports of illegally felled wood and wooden products made from it into Germany in conformity with the WTO legal specifications
- By 2020 the ecological balance sheets drawn up by German industry must contain all the environmental effects of the raw materials used, up to and including waste management. At the same time they will also indicate the effects of the products upon the biodiversity of other countries.
- By 2020 biodiversity aspects will be comprehensively integrated into the world trade order.

Social aspects of the preservation of biodiversity

- In 2015 for at least 75% of the population the preservation of biological diversity will count as one of the priority social challenges.
- By 2020 the greening of residential areas including the surrounding green areas (for example, green plots, small

green areas, roof gardens and façade greening) will be greatly increased. Publicly accessible green areas with a variety of qualities and functions will as a rule be accessible within walking distance.
- By 2010 development of a comprehensive concept *'Stadt der kurzen Wege'* ('City of Short Distances') and implementation by 2020
- By 2015 an increase in the proportion of places in natural-experience kindergartens to 25%
- By 2015 the reduction of pollution of fish (for example, eels) and mussels to such an extent that they are (once again) edible without restrictions
- By 2020 about 30% of the land in Germany will be nature parks. By 2010 80% of the nature parks will satisfy the quality criteria established in the tourism and recreation sector. All national parks will allow visitors to experience nature in suitable areas.
- Support for the appropriate participation and involvement of migrants in innovations, knowledge and dialogue aimed at the preservation of biological diversity
- By 2015 across all German development aid an increase of 50% in the proportion of the resources for development projects which have as their goals the protection and sustainable use of biodiversity together with the equitable offsetting of advantages

Because of the great complexity of the task of preserving biodiversity, the high number of policy areas affected and the many governmental and non-governmental players involved, the demanding challenge can only be met with a concerted effort. The activities of the *Länder*—for example for setting up the Natura 2000 network of protected areas—and many other advances in the preservation of biodiversity demonstrate that Germany is heading in the right direction. However, the continuing high level of danger for many species and habitats makes it clear that additional efforts are required.

In order to include all of the players in society in the implementation of the Strategy, in December 2007 a dialogue intended to last for several years was started (*www.biologischevielfalt.de*). The building blocks of this project include national and regional forums on biological diversity as well as various workshops. The prelude to the implementation process was the first national forum on biological diversity on 5th/6th December 2007 in Berlin. A second national forum was held in autumn 2008. Seven regional forums have taken place on important subjects related to the National Biodiversity Strategy.

c) Biodiversity in the agricultural, forestry, fisheries and food industries

The variety of forms of life which are used and usable in the farming, forestry, fishery and food industries in their genetic complexity and the complexity of the ecosystems used—the so-called agricultural biodiversity—is a fundamental part of the earth's biodiversity. In this, through the preservation of the cultural landscape farming and forestry also contribute to the preservation of the wild animals and plant species there. For this reason the Federal Government's National Strategy on Biodiversity is supported and supplemented by the sectoral strategy of agro-biodiversity (available at *www.bmelv.de*). Amongst other things, the goals of this include the long-term preservation and wider use of genetic resources for the food sector and the agricultural, forestry and fisheries industry, as well as the attempt to harmonise the various interests in using and protecting biodiversity.

Measures in the area of agricultural policy are also of importance for the preservation of biodiversity, such as the landmark Luxemburg resolutions of July 2003 which have radically reformed EU agricultural policy. Disconnecting direct payments from farm production and linking direct payments to requirements relating to environmental and natural protection has created EU-wide elbow room for more sustainable agriculture. Germany has chosen an implementation model which sets grasslands and farming land on an equal footing as an element of the landscape, and thus takes account of biological diversity to a particularly high degree. In addition, there are support measures from the Joint Task *Verbesserung der Agrarstruktur und des Küstenschutzes* ('Improvement of Agricultural Structures and Coastal Protection ') which, among other things, contribute to environmentally-friendly agriculture, the conservation of genetic resources in agriculture, the improvement of water purification and the ecological structure of water bodies, and also sustainable rural development.

German fisheries policy has also strengthened its efforts for the preservation and sustainable use of oceans and inland waters (cf. Chapter D.III.3.). But it all decisively depends on an environmentally-friendly and quality-oriented agriculture with an economic perspective. To a large extent it also depends on consumers giving preference to regionally produced or certified foodstuffs and products when shopping.

The Federal Government supports the conservation and sustainable use of plant genetic resources in the context of national, bilateral, and international projects and programmes which, for example, include support for the international agricultural research centres of the Consultative Group for International Agricultural Research (CGIAR). Furthermore, the Federal Government

has committed itself to the appropriate statutory conditions for a sustainable use of agricultural biodiversity.

d) Biodiversity and climate change

The change in the climate which is chiefly caused by greenhouse gas emissions is already shifting the habitats of many species, and particularly because of the hot and dry summers is beginning to reshape the landscapes in Germany. Increased climate change in the future will greatly alter both the variety and spectrum of species through immigration, migration and extinction of animal and plant species. In addition it is anticipated that the landscape and biodiversity will change as a result of demographic and economic changes (for example, the abandonment of agricultural uses in regions affected by outward migration, or the increasing cultivation of plants for energy). In the national strategy on adaptation to the consequences of climate change which is currently being put together, these aspects will be taken into consideration (cf. Chapter C.I.5.c.).

3. Sustainable fishery

a) Development of management- and rehabilitation plans

The Federal Government expressly advocates that the principles of sustainability should be applied to fishery more strongly than up to now, not only on the national level and within the EU fisheries policy, but also on an international level. Precisely in the fishing industry, guaranteed fish stocks with sufficient regeneration are the basis for the creation of value and jobs, and should only be used in the long term in keeping with their ability to regenerate themselves (the second management rule of the Strategy for Sustainable Development). To this end, total catches and technical regulations should be based upon reliable scientific studies.

In particular, Germany supports the further development and consistent implementation of multi-year regeneration and management-plans for over-used fish stocks in the context of the EU fisheries policy. Federal fisheries research has contributed decisive preliminary work for this. In addition, the Federal Government takes an active part in the development of regulations for the avoidance of undesired bycatch and discarding.

Also on an international level, the Federal Government advocates the integration of sustainable replenishment and management plans and aspects of biodiversity into fisheries management by regional fisheries organisations, and into EU fisheries agreement with non-EU countries. In the case of about 20 EU agreements, particularly with African developing countries (for example, currently Mauritania), the Federal Government in particular is involved in measures for developing the local fisheries management and the fisheries industry. In addition, through bilateral development collaboration Germany supports the development of capacities in the area of fisheries management and fisheries inspection.

The Federal Government is particularly concerned about the sustainability of fisheries in rivers and lakes in Germany. Together with the *Länder* responsible for inland fishing, the protection of the migratory fish species (for example, eels, salmon, and sturgeon) is to be intensified through research projects and support for stocking measures on a European level. For this purpose, in the context of the structural funds programme the development of fish ladders will be supported, as will the cooperation of the *Länder* amongst themselves, with other countries bordering on the rivers and with power plant operators.

b) Protection of sensitive deep sea ecosystems against destructive fishing practices in the oceans

Seamounts and deep sea plateaus often accommodate sensitive habitats, such as hot springs and coldwater corals, and count as a refuge area for numerous species which occur only locally. On the basis of their mostly slow growth rates and their limited distribution, these species are regarded as especially sensitive to human interference. Deep sea fisheries with bottom trawling gear therefore present a threat to the biodiversity of sensitive deep sea ecosystems. Since a large proportion of these ecosystems lie outside the 200 sea-mile zone of the coastal countries, the international cooperation of the community of states in regulating deep sea fisheries is absolutely essential.

Together with the EU, the Federal Government has substantially contributed to agreements being reached in December 2006 at UN level according on the regulation of deep sea fisheries and the protection of deep sea habitats. The German Presidency of the Council of the EU together with the EU Commission seized the initiative for the protection of deep sea ecosystems against destructive fishing practices. As a result of this

initiative, the Commission presented a proposal in October 2007 on which the Fisheries Council reached an agreement at the end of June 2008.

c) The fight against illegal fisheries

Political efforts to achieve sustainable fishing in the world's oceans are undermined in many ways by illegal, unregulated and unregistered fisheries (IUU fisheries). The estimated value of the catches from IUU fisheries is as much as 10 billion euros. This is enormously damaging to both legal fisheries and marine biodiversity.

The German Council Presidency and other member states have therefore advocated that the EU should assume a prominent role in the worldwide fight against illegal fisheries. For this reason in 2007 the EU Commission presented a proposal for the prevention and elimination of IUU fisheries on which political consensus was achieved in the Fisheries Council by the end of June 2008. The goal is to suppress any kind of access by IUU fisheries and their products to European waters, harbours and the internal market. In parallel the Federal Government supports the FAO action plan on IUU fisheries as well as appropriate measures by regional fisheries organisations, such as black lists and import bans on products from IUU vessels. The Federal Government's measures against IUU fisheries also serve to protect sustainably operating German fisheries against unfair competition.

d) Eco label for fisheries products

In addition to the wide variety of measures for the preservation of the fish stocks which apply directly to the fisheries, the retail sector and fish-processing industry are making a growing contribution towards sustainable consumption, as also are consumers through the purchase of fish from sustainable use.

At the invitation of the Federal Government, in November 2007 a round table discussion took place between representatives of the areas mentioned above and environmental and consumer organisations. During the discussion, above all the importance of eco-labels was emphasised as effective instruments for supporting sustainable fishing from the demand side. These labels are awarded to responsible fisheries which demonstrably do not contribute to the problem of over-fishing (for example, the blue label of the Marine Stewardship Council—MSC). For such labels to be credible, a reliable and binding statutory framework is required. At the round table there was agreement on the need for binding minimum requirements, which now need to be given concrete form at EU level. Here too the Federal Government wants to safeguard the future of sustainably operating fishing businesses.

In order to bring forward the introduction of eco-certified fish products, in November 2005 the Federal Government ran a symposium attended by members of fisheries and fish processing companies. A further symposium on the *Ökozertifizierung in der Fischerei* ('Eco-certification of fisheries') in February 2008 dealt with the contribution of the fishing industry, the retail sector and the catering industry. In discussions about the new EU eco-regulation, Germany supported the idea that fisheries products from aquaculture should be included in the regulation. This project was successfully completed during the German Presidency in June 2007.

In addition Germany supports projects for the certification of local fisheries or aquaculture in developing countries. In this way a new source of income for the local fisheries can be opened up and at the same time sustainable management of resources can be implemented.

4. Water resources management, flood prevention and ocean protection

The protection and sustainable management of water as a resource, as well as bodies of water and water-dependent ecosystems, is closely connected with many areas of action and goals formulated within the Strategy for Sustainable Development. Bodies of water undertake important ecological, economic and social functions: an adequate availability of clean water is a basic prerequisite for healthy habitats, for nutrition and also as an important factor in production. As was additionally stated from a global perspective in the National Strategy for Sustainable Development 2002, access to clean drinking water and to basic sanitary conditions is one of the central tasks of developmental policy as well as being of growing importance in peace and security policies. German efforts worldwide are directed towards implementing the UN's Millennium Goals of improving access to clean drinking water and basic sanitary conditions, along with cross-border cooperation in the management of bodies of water and water resources.

German water policy centres around the goal laid down by the EC Water Framework Directive that a good condition should be achieved for all bodies of water including ground water by 2015 (or

if all the possible deadline extensions are used, by 2027 at the latest). In addition, fundamental goals have arisen from the EC Directive on the assessment and management of flood risks, such as further developing of an efficient flood risk management system and guaranteeing sufficient protection of the population and cultural and economic resources against damage by flooding and storm tides.

The implementation of the EC Water Framework Directive is now entering a central phase: by the end of 2009 national programmes of measures and national/international management plans must be created and coordinated for ten river basin areas. With these instruments the important management goals and the intended measures for achieving them will be established. They are to be coordinated beyond the *Länder* and state borders. Work on drawing up the programme of measures is currently underway in the *Länder*. Within this, they often actively involve the water users who are affected and the general public in the planning activities on regional and local levels. It is becoming clear that for many of the bodies of water, good conditions can not be achieved by 2015 and that therefore extensions to the deadlines will have to be used. The Federal Government is supporting the implementation of the Water Framework Directive by means of legislative measures in the context of the Joint Task *Verbesserung der Agrarstruktur und des Küstenschutzes (GAK)* ('Improvement of Agricultural Structures and Coastal Protection'), and through research activities on important methodological aspects and practical measures. The government is coordinating the German position on collaboration in the six international river basins with the *Länder*.

The European guidelines on the protection of ground water have been further defined by the EC Ground Water Directive for the protection of ground water against pollution and deterioration (2006/118/EC). In particular criteria have been established for ascertaining and evaluating ground water conditions along with trends in increasing pollutant contamination.

In the area of flood risk management and flood protection clear progress has been made in the last few years; this is shown, for example, by the report on the implementation of the flood water action plan from the International Commission for the Protection of the Rhine, 1995–2005 (ICPR-Report No. 156 d at http://iksr.org) or the first report on the implementation of the *Hochwasser Elbe* action plan ('Action Plan for the Flood Protection in the Elbe River Basin') by the International Commission for the Protection of the Elbe (see *www.ikse-mkol.org*). Nevertheless, the improvement of the precautionary inland waterways protection remains a constant challenge and long-term task, including in view of the effects of climate change which are beginning to appear. In particular, improvements to the retentive capacity of land areas and the creation of additional retention areas often lag behind the plans.

The same applies to coastal protection. Coastal protection is a prerequisite for safeguarding and sustainably developing the habitat and economic area of the low-lying regions in the North Sea and Baltic catchment area, which contain around 1.1 million hectares and thus comprise approximately 3% of federal territory. As a result of climate change combined with a further rise in sea level, the increase in the energy of the waves, tide changes and an intensification of storms, our coastal protection installations must continually be improved or other adaptation measures must be implemented.

The protection of the marine environment and sustainable use of marine resources (cf. also Chapter D.III.3.) are likewise of great importance for sustainable development. On 15th July 2008 the European Marine Strategy Framework Directive came into force. According to the conclusions of the European Council, this Directive is intended to provide the environmental pillars for the integrated marine policy of the European Union. The goal of the Directive is the achievement of good conditions for the marine environment in Europe by 2020. In the context of the regional marine strategies which need to be developed, and which require an integrated cross-sectoral concept of protection, the ecosystem approach to the regulation of human behaviour which influences the marine environment will be applied. The strategies are also designed to enable the sustainable use of marine goods and services today and by future generations, and also to contribute to the concerns of the marine environment being taken into account in all political measures, agreements and legislation affecting the seas.

For the Baltic Sea Region, by adopting the HELCOM Baltic Sea action plan (see www.helcom.fi) in November 2007 the contractual partners to the Helsinki convention have already agreed upon important options in relation to the implementation of the Marine Strategy Framework Directive.

The protection and sustainable management of water as a resource in Germany require the involvement of numerous players on the Federal, *Land* and regional/local levels. The sustainable

management of bodies of water—across Federal and *Länder* borders—makes a coordinated course of action necessary on various levels; appropriate bodies are being established for this. However, it is also necessary to involve the relevant user and interest groups, for example farmers or nature conservation organisations. Functional structures for this have been created in the *Länder*. Particularly in the implementation of the Marine Strategy Framework Directive, close cooperation with the international players in the various regional agreements on marine protection is essential.

IV. Health

1. Challenges

Health is the central prerequisite for a high quality of life and a long life-expectancy. However the demographic development towards an ever higher life expectancy in Germany poses a growing challenge. Current life expectancy at birth is already 76.6 years for boys and 82.1 years for girls, and will most likely increase further. However, in combination with a low birth-rate of currently only 1.3 children per woman, this basically very positive development is leading to a decline in the population and a change to the age structure of the population. All areas of our society must react to these changes and make use of the opportunities they present. The demographic challenge in terms of the increase in the number of people in need of nursing care is especially apparent, as this looks likely to increase from just under 2.1 million people today to approximately 4 million people in 2050. This development on its own presents our health care and financial system with a serious challenge. Conversely, these challenges also offer substantial opportunities for innovations in society, growth in the markets oriented towards health care and sustainable job opportunities in the health care system.

Besides demographic development, the lifestyles and living and environmental conditions of the population represent a challenge to the German health care system. Just under one-fifth of the total population living in Germany is obese and therefore especially susceptible to illness. Moreover, it has been shown that health risks especially among children and adolescents differ according to social status. Thus children from socially disadvantaged families or from families with a background of migration are more often overweight, more often have an unhealthy lifestyle and a higher risk of accidents, and they less frequently take advantage of preventive healthcare examinations.

According to the World Health Organisation (WHO), up to 60% of all illnesses worldwide are caused by the environment. In Germany asthma and allergies are clearly increasing. Calculations show that pollution due to particulate matter emissions leads to a reduction in average life expectancy of about ten months. The number of skin cancers has doubled in the last twenty years. These burdens too are distributed unequally. Prevention plays a special role in all areas.

In a global context, protection against infectious diseases and both existing and new environmental risks—for example, in the wake of climate change—is especially important. An environment which promotes health and a guarantee that foodstuffs pose no health threat are essential.

2. Goals of a sustainable health care policy

For a sustainable health care policy it is important to minimise health risks, support a holistic awareness of health and implement a preventive health care policy on all levels and in all areas of life. A functioning health care system is one of the contributory factors in people remaining healthy for longer and living to an increasing age—the healthcare system must thus be ever more closely tailored to the needs of an ageing population and its long-term financial viability must be guaranteed. In order for our health care system to be able to contribute to social stability and justice in the future too as a part of our social system, we must also ensure that the system of health care is open to all citizens—irrespective of income—and that the financing displays solidarity.

3. Reform measures and prevention

The reform measures in health care policy which have already been implemented or introduced by the Federal Government are reinforcing the effectiveness of the health care system and making it fairer and more secure for the future. By means of preventive measures, the action plan *IN FORM – Deutschlands Initiative für gesunde Ernährung und mehr Bewegung* ('In form—Germany's initiative for healthy nutrition and more exercise') and also the continuous improvement of food safety, major health risks, including those in the context of nutrition and consumer policy, are being more

effectively prevented. The 'Environment and Health Action Programme' is initiating activities aimed at recognising environmentally caused risks to health and developing strategies for reducing these risks *(www.apug.de)*.

a) Strengthening competition in statutory health insurance

By passing the *Gesetz zur Stärkung des Wettbewerbs der gesetzlichen Krankenversicherung* ('Statutory Health Insurance Competition Strengthening Act'), the Federal Government has created the prerequisites for greater efficiency in the German health care system. At the same time equal access for all citizens to high-quality medical care is guaranteed. The regulations which mostly came into effect on 1st April 2007 are already displaying effects. More than 130,000 people who were previously without insurance protection have been accepted once again into a statutory or a private insurance scheme. Incentives to competition by independent providers and health insurers contribute to greater efficiency and serve the purpose of reducing ancillary labour costs and increasing the quality of care. The financial stability and sustainability of statutory health insurance have also been strengthened with the simultaneous improvement of the scope of services. In order to finance the tasks of statutory health insurance throughout society, a subsidy from public tax revenues will be made available and will increase annually until 2016. In 2007 statutory health insurance achieved a surplus of 1.76 billion euros. At the latest by the launch of the new health fund on 1st January 2009, all health insurance companies must be debt free. In view of the positive financial development and the obligatory implementation of the debt write-off concept for the few companies still in debt, this goal will also be reached. The current data published by the OECD attests to the fact that the German health care policy has successfully reduced costs on an international comparison, just as it did in the previous year.

b) Further development of long-term care insurance

With the *Pflege-Weiterentwicklungsgesetz* ('Act on the further development of the structure of long-term care insurance'), the benefits of this insurance will be even better customised to the needs of both patients requiring care and their relatives. The rates of benefit for home care and the highest level of inpatient care, which have remained constant since 1995, will be increased in three steps. In addition, and in line with the wishes of many people in need of care, the structures of nursing care in the home need to be reinforced. As well as the increase in the amounts of benefit, in the area of home care an entitlement to advice on care and—at the discretion of the *Länder*—a nationwide system of care support points will be created in order to establish and expand structures of provision on a local scale. The Act includes important measures to improve the quality of care, and to create transparency and comparability of the benefits provided. The rate of contributions for long-term care insurance was raised by 0.25 % points to 1.95% on 1st July 2008. This increase will probably enable long-term care insurance benefits on the basis of the Act to be financed until the beginning of 2015. Model calculations by the German Council of Economic Experts have also made it clear that, taking account of the legislative changes intended by the reform of long-term care, the rate of contributions for social long-term care insurance will also be able to remain in a manageable framework until 2050. In its basic scenario for 2050, the German Council of Economic Experts assumes a contribution rate of 2.5%.

c) Prevention

From the perspective of individual well-being, but also from the perspective of the financial sustainability of our system, it is better to prevent illness in the first place. The extent of the potential for economic returns through preventive healthcare in all areas is made clear by the estimated 65 billion euro loss of gross value creation caused by illness and accident related days of absence in the workplace (report by the Federal Institute for Occupational Safety and Health, February 2008). The promotion of health and the prevention of illness are social duties which are everybody's responsibility. We want to create a structural framework in which, among other things, measures by the social insurance providers and social insurance branches are better coordinated and upgraded in terms of their quality.

Among other things, due to measures by the Federal Government for the prevention of tobacco use as well as statutory regulations for reducing smoking, the smoking rate has been continuously reduced; according to a micro-census in 2006 it now stands at 27% of the population. In order to provide protection against the dangers of passive smoking and as a measure for the improvement of indoor air quality, smoking has been strictly banned in federal public institutions, on public transport and at passenger railway stations. Adolescents are not permitted to smoke in public and may not be sold tobacco products.

However, a survey on children and the environment has shown that almost one in two children aged between 3 and 14 lives in a household with at least one smoker. This means that further efforts are required in order to protect children better against passive smoking.

To date no satisfactory answer has been found in respect of the risks of excessive alcohol consumption. Alcohol consumption by Germans still stands at a high level, and is currently increasing amongst young people in particular.

The prevention of illnesses which are caused by an unhealthy lifestyle is one of the greatest challenges of the coming decades. This is why the Federal Government has developed the national action plan for the prevention of incorrect nutrition, lack of physical activity, overweight and the associated diseases, which will run until 2020. In order to do justice to the need for a comprehensive strategy for Germany, the *Länder*, municipal umbrella organisations and civil society have been included in this. The action plan was signed off by the Federal Cabinet on 25th June 2008 under the title *IN FORM – Deutschlands Initiative für gesunde Ernährung und mehr Bewegung* ('IN FORM— Germany's initiative for healthy nutrition and more physical activity').

The goal is to improve people's behaviour in terms of exercise and nutrition, and create conditions in which children will grow up more healthily and adults will live more healthily. The national action plan is designed to contribute to a higher quality of life and an increased capacity for achievement, to offer comprehensible everyday information for the entire population and contribute to long-term structures which will make it easier for everyone to assume personal responsibility for a healthy lifestyle.

In order to achieve this, the players involved and the concrete measures will be networked, effective projects publicised, transparency supported, and recommendations on nutritional habits and physical activities standardised.

Measures for the improvement of environmental conditions are leading to a reduction in environmental pollution and consequently also to a reduction in the adverse effects of these pollutants on people. Thus, for example, the prohibition of lead in fuel has led to a 70% reduction of lead contamination in the blood in the last twenty years, while the prohibition of pentachlorophenol (PCP) has likewise led to a 90% reduction of PCP levels in human blood over the same period. Environmental contamination by dioxin and lead has also been declining for many years and is now very minor. Consequently for example the concentration of dioxin in milk fell by about 80% between 1987 and 2006, in other words from approximately 2.3 picograms of dioxin equivalent per gram of milk fat to approximately 0.4, and thus lies far below the applicable European threshold values.

Additional efforts are being undertaken in order to protect the public in the long run against newly arising pollutants. The new EU chemical regulation REACH has also made a contribution in this context. In the transport sector the reduction of particulate matter emissions and noise has been of great significance.

In the improvement of food safety the Federal Government's focus has been on: improving food controls, minimising substances which pose a health risk in food, and combating animal diseases which are transmissible to humans. Another important element of consumer protection in the health area is the action plan against allergies which was launched in March 2007. Allergies must be reduced and the daily life of allergy sufferers made more tolerable. Food labelling to indicate allergenic substances has been improved and the use of allergenic substances has been reduced in cosmetics, washing and cleaning agents, and also tattooing agents. As a result of broad-based information measures, people who are interested are now better informed about the background to allergic reactions (Internet portal *www.aktionsplan-allergien.de*).The Federal Government is at the same time consistently pushing ahead with allergy research.

Through these and additional measures we are able to report a very positive trend in the reduction of so-called avoidable mortality, which indicates the high quality of our health care system. All cases of death involving people who have not yet reached the age of 65 count as avoidable mortality. This figure has declined continuously since 1990, and in the meantime the figures for women from the *New* and *Old Länder* have become aligned. With its disease prevention programmes the Federal Government is in harmony with the goals of the European Union and the World Health Organisation (WHO). The adoption of the indicators on smoking behaviour and overweight in the Strategy on Sustainable Development means that we will address the challenges faced here, while at the same time we are also following the recommendations made by the Parliamentary Advisory Council concerning

the 2006 Indicator Report published by the Federal Statistical Office to concentrate more intensively on prevention.

V. Social integration, demography and migration

The fight against poverty and social exclusion is an important element of the political programmes of both the Federal Government and the *Länder*. For the Federal Government the point of reference for a socially just policy is the creation of social and economic participation and equal opportunities for all members of society to realise their potential. This is because poverty and social exclusion reduce the chances of those affected developing their individual abilities and achieving the plans they have for their lives, and thus also limit their participation in the social and economic life of society. However, poverty and social exclusion do not simply represent a problematic situation for the individual but also seriously affect social cohesion.

The central prerequisites for participation are education and access to the job market. Guaranteeing social integration and the participation of all citizens requires the preservation of the competitiveness of the German economy. The Federal Government attaches great significance to the integration of immigrants, and it has already provided substantial resources for achieving this. For example, around 155 million euros a year is made available for integration courses, and numerous additional measures to support integration have been financed. In the follow-up process to the national integration summit, a national integration plan was drawn up which, amongst other things, contains further voluntary commitments on the part of the Federal Government.

Germany has benefited from the fundamental reforms of the social system and the stabilisation of supplemental wages costs, and since 2006 has been experiencing a strong economic recovery, which has been well received by increasing numbers of people (cf. also Chapter A.III.1.). The successes in the labour market are becoming especially apparent. Thus between December 2006 and December 2007, the number of unemployed went down by 602,000 to 3.4 million. The unemployment rate thus stands at 8.1%. At the same time, since 2006 the number of workers subject to social insurance payments has been rising for the first time since 2000. Thus in December 2007 the number of workers subject to social insurance payments was 588,000 higher than in the previous year (+2.2%). A further financial burden is being lifted from workers and employers through the reduction of the rate of contributions to unemployment insurance from 4.2% to 3.3% at the beginning of the year. The growth in the number of people with only marginal employment on the other hand is slight, with an increase of 0.3% between December 2006 and December 2007.

All groups are benefiting from the upturn in the labour market. The number of long-term unemployed fell by 384,000 (-24.6%) in December 2007 in comparison to the same month in the previous year. The number of older unemployed (between 50 and 64 years of age) was 875,000 in December 2007, thus 192,000 (-18%) fewer than in the previous year. The number of foreigners registered as unemployed in December 2007 was 518,000, or 12.8% (-76,000) lower than the figure for the previous year.

We are also making progress in the employment of young adults. No young adult should be unemployed for longer than three months. This political goal is more ambitious than the corresponding EU employment policy guidelines (whereby young adults should receive an offer of employment after six months' unemployment at the latest) In the foreground is the Federal Government's special training initiative, which has been extended for three years up to 2010 together with trade and industry, along with the previous special programme in support of entry-level qualifications of young workers *(EQJ)*; in autumn 2007 this was carried over in to the Third Book of the Social Code as an employer benefit. The business community has greatly extended its previous pledges. Unemployment among young people is been continually declining and is more than a quarter lower than in the previous year (341,000 young unemployed in December 2007). Taking the training bonus into account, by 2010 approximately 100,000 additional apprenticeships will be created for repeat applicants.

It is gratifying that in December 2007 the number of unemployed among severely disabled people fell by 11.9% in comparison to the previous year, and that a distinct reduction can also be noted in the number of severely disabled women who are unemployed (-11.3%). The decline among severely disabled people thus continues to be slower than the decline in unemployment generally, but is coming closer to this figure. This makes it apparent that for employers in particular, both information about the outline legal conditions for the training and employment of disabled people and also illustrations of examples of the successful implementation of the integration of

such people into the world of work is needed in the labour market in general if the objective of non-discriminatory participation is to be achieved. The need for information and exemplary illustration is being well served by the initiative 'job—Jobs without Barriers' (the initiative for training and employment of disabled people as well as workplace prevention programmes), which will be carried out until 2010.

The demographic change presents major challenges to politics and society. In the future, when there are fewer people living in Germany than at present and on average they are clearly older than people today, this situation will increasingly affect the economic and social situation in our country (for more details see Chapter C.III.).

The Federal Government has already adopted various measures to master the challenges associated with demographic change. Significant improvements have been achieved in particular in increasing the level to which older people participate in employment and—connected with this—the long-term viability of public finances.

Many businesses do not employ anyone over 50. If we want to guarantee our economic prosperity in an ageing society, then we must further increase the participation of older people in the labour market. The proportion of older workers over 55 years of age in active employment has increased from 37.9% in 2001 to 51.5% in 2007 (figures according to Eurostat). The EU objective for 2010 (an increase in this percentage to 50%) has thus already been exceeded. In order that this positive trend continues, with the 'Initiative 50 Plus' the Federal Government has set in train a bundle of measures for the further improvement of employment opportunities for older people. In this way the employment of older workers will be further increased and the premature exclusion from professional life of people who are 55 and older will be further reduced. Older workers must also take part in professional further training to a markedly greater extent than has been the case up to now.

According to the EU objective, the employment rate for women should be 60% by 2010. This goal too has already been achieved. The proportion of women in employment in 2007 was on average 64%.

The Federal Government has set new goals for the sustainability indicator 'Employment rate'. The general employment rate (15–64 years of age) should increase to 73% by 2010, and to 75% by 2020. For older employees the goal is an employment rate of 55% by 2010, and 57% by 2020.

VI. Global challenges in respect of poverty and sustainable development

1. Initial situation and problems faced

In an interdependent world, problems such as poverty and the dangers posed to natural livelihoods are central challenges on the way to worldwide sustainable development. In particular, climate change and its effects, which are already apparent, —droughts, storm disasters, flooding—make clear the direct negative consequences which increasing environmental destruction will have in terms of the opportunities for development of the poorest countries in particular.

The measures with which the Federal Government intends to tackle the current crises in the world food supply have already been outlined above in Chapter C.IV.

The Federal Government expressly declares its acceptance of the global responsibility which is an indispensable prerequisite for implementing its overall concept of sustainable development. The basis of the German commitment is the United Nations Millennium Declaration and the resulting Millennium Development Goals (among others halving extreme poverty by 2015) together with the resolutions made at the Earth Summit in Rio in 1992 and the action plan of the World Summit for sustainable development at Johannesburg in 2002. Bearing in mind the tenth management rule of the National Strategy for Sustainable Development, which relates to global sustainable trade (see Annexe, p. 208) the emphasis here is on the development of structural prerequisites which will enable the protection and sustainable use of natural resources, the sustainable management of world trade and sustainable, widely effective economic growth and investment.

2. The Millennium Development Goals as a frame of reference and yardstick

Taking stock halfway along the road to achieving the Millennium Development Goals (MDG) shows that many countries have made important progress. In 1990 just under one third of the people on earth lived in extreme poverty. Today it is just under one fifth—fewer than one billion people for the first time. Today basic education for everyone seems an achievable goal. Improvements have also been made in the reduction of infant mortality and in the water supply.

Progress is still insufficient and very unevenly distributed regionally. Unequal opportunity, poverty

and environmental problems still persist even in areas with high economic growth. The largest deficits in all goal dimensions can be foreseen in Sub-Saharan Africa. In most regions—even especially successful ones— (for example East Asia) progress in individual areas exists side by side with major challenges in other areas (for example, success in the fight against poverty alongside problems in health care and environmental protection). Fragile states run the greatest risk of not reaching the goals (for example, 37% of the 72 million children who do not attend school live in three of the states designated as fragile by the OECD).

Special challenges remaining:

- MDG 1: The fight against malnutrition among children under five years of age is not progressing sufficiently, especially in South Asia and Sub-Saharan Africa, where nearly a half or almost a third of children in this age group are malnourished.
- MDG 3: By 2005 only 63% of the 188 countries with available data had achieved equilibrium between the sexes in primary school education; at secondary school level it was only 37% of the countries, and in university education fewer than 3%. Worldwide the percentage of women amongst non-self employed earners in the non-agricultural sector increased only slightly (by 3 percentage points) and the number of women members of national parliaments worldwide has increased by 4% since 1990 and is now 17% worldwide.
- MDG 5: Over 500,000 women still die every year from the complications of pregnancy and childbirth or from abortions performed by non-professionals. Globally between 1990 and 2005 the maternal death rate declined by 2.5%. The objective is to reduce this by three quarters. The deviations from the MDG target corridors are at the greatest in the countries of Sub-Saharan Africa, Southern and Central Asia and Oceania.
- MDG 6: In 2007 about 2.5 million people worldwide were newly infected with HIV. Altogether there were 33.2 million children and adults infected with HIV, 68% of these in Sub-Saharan Africa. In some Sub-Saharan African countries as well as in East Asia and East Europe, the rate of infection with HIV/Aids rate is still increasing.
- MDG 7: Strong deficits in the supply of sanitary conditions (most off track MDG) and clean drinking water are impeding the achievement of other MDGs. Despite progress in some regions 2.6 billion people continue to have insufficient sanitary provision and 1.1 billion have no access to clean drinking water.
- MDG 8: In 2008 unemployment among the young was three times as high as among adults. In most developing countries the rate of unemployment among the young has either increased or stagnated in the last ten years. The central significance of productive full employment and dignified work for all, including women and young people, is accommodated on the official list of MDG indicators which amongst other things has been expanded to include an appropriate goal (target 1.B) which came into force on 15th January 2008.
- Global climate change is a scientifically accepted reality. Its consequences will have an especially hard impact upon the developing countries and amongst other things will jeopardise the achievement of the MDGs along with the progress already made.

The Federal Government orientates its development policy commitment around these challenges. In addition it advocates in particular that the scope for financing development should be expanded and the effectiveness of development collaboration should be increased.

The Millennium Declaration and the MDGs provide a frame of reference and yardstick for German development policy. On the basis of its 2015 action programme, the Federal Government is continually substantiating the tasks arising from this framework for action. Its development policy focus remains the improvement of living conditions for poor people in developing countries.

Against this background, development topics also played an important role during the German G8 Presidency in 2007. During the G8 summit in Heiligendamm the G8 states agreed to make 60 billion US dollars available for the fight against HIV/AIDS, malaria and tuberculosis along with strengthening the health care system, and to take greater account of gender aspects. Germany will contribute 4 billion euros by 2015. The Global Fund to Fight AIDS, Tuberculosis and Malaria (GF) in particular is to be supported financially; an important step in this context was the successful Global Fund Replenishment Conference at the end of September 2007 in Berlin. The G8 states also want to contribute to strengthening of the health care systems and financing them equitably, as well as coordinating bilateral and multilateral partnerships for the health care provision more effectively.

Under the German Presidency the EU Council's conclusions on 'Gender Equality and Women's Empowerment in Development Cooperation' were passed. They emphasise the central importance of equality of the sexes and the enforcement of human rights for women and girls in achieving internationally agreed development goals and globally sustainable development. This is also clear from the revised list of MDG indicators, which calls for all indicators to be analysed and reported on by gender. With the conclusions of the European Council passed in June 2008, 'The EU as global partner for development: Speeding up progress towards the millennium development goals', and the EU agenda for action based on these, the European member states and thus Germany too committed themselves to intensified involvement and concrete measures for the elimination of gender specific discrimination against women and support for true equality of rights between women and men.

3. Crisis prevention

Conflicts which are dealt with by force often destroy the developmental endeavours of decades. There is often a close connection between poverty, violations of human rights and violent conflicts. The causes of conflicts range from economic and social inequality or the absence of the rule of law to increasing competition for diminishing natural resources. For this reason the prevention of crises and the implementation of all human rights and principles of human rights, amongst other things through the support of good governance, are likewise a decisive field of action for a global sustainability policy.

In order to support peace and development the Federal Government advocates a coherent collaboration between foreign policy, security policy and development policy. It remains the goal of the Federal Government to reduce the structural causes of conflicts in developing countries and to prevent an escalation of crises at an early stage. In this context, collaboration in terms of development policy successfully employs various instruments, such as a programme of dialogue in the context of civil peace efforts.

Environmental crises and conflicts over land use are heightened by climate change. An example of this is disputes over diminishing water resources or fertile land. Support for developing countries in their adaptation to climate change is also of central importance with a view to crisis prevention (see below).

4. Development finance and development policy dialogue

The consensus at Monterey (2002) emphasised the shared responsibility and mutual obligation of industrial and developing countries in achieving the goals signed off in the millennium declaration. It specifies the mobilisation of resources by the countries of the south as the first source of development finance. As well as structural changes, amongst others in the areas of trade and foreign investments, the industrial states were called upon to increase their development expenditure (ODA—Official Development Assistance) by 2015 to 0.7% of their gross national income (GNI). In 2007 Germany achieved 0.37%, and thus exceeded the agreement given by the European Council of Barcelona in 2002 that a quota of 0.33% would be reached by 2006 (cf. in this context indicator 20 in Chapter B.II.). According to the agreed EU step-by-step plan, the EU member states are now expected jointly to reach a quota of 0.56% by 2010. Germany has undertaken to achieve 0.51% by 2010. In addition to budgetary funds and debt cancellation, the Federal Government will also use innovative financial instruments for this. Thus in 2008 revenues from the auctioning of emissions certificates for international projects of relevance to the climate were used. Between 2008 and 2011 an increase in the budgetary funds for German development cooperation of 3 billion euros is planned (750 million euros per year). Over and above this, the draft budget for 2009 provides for an additional increase of 800 million euros a year for the period 2009–2012.

Furthermore, two worldwide debt relief initiatives in the last few years have successfully contributed to creating or extending the financial room for manoeuvre of the developing countries in terms of sustainable development. In the context of the HIPC initiative (the expanded Heavily Indebted Poor Countries initiative), by the end of 2007 Germany was able to waive debts amounting to 4.5 billion euros, and this could amount to up to 7 billion euros in total. In addition, multilateral debts have been waived, and Germany's involvement here came to just under 3.5 billion euros. Likewise, the initiative Debt2Health created a new instrument by means of which debts could be turned into investments in the area of health care.

Finally the Federal Government has expanded its dialogue with large emerging countries and where appropriate new donors. Intensive collaboration is taking place with the so-called anchor countries in the context of development cooperation, especially in the fields of environmental protection and sustainable economic development. The resolutions of the 2007 G8 summit in Heiligendamm also apply here: within the Heiligendamm Process the G8 states want to conduct a new form of institutionalised and more in-depth dialogue with China, India, Brazil, Mexico and South Africa for two years on central issues of the world economy, such as investments, the social structure of globalisation, innovations and energy efficiency for the reduction of CO_2 emissions. A further important theme in this context is development and economic cooperation, especially in Africa.

In order to supplement the orientation of the contents of development collaboration towards the millennium declaration and the Millennium Goals and the further development of the financial options which are necessary for these, the Federal Government continually adapts its development

policy instruments to the requirements of the new global partnership. In Paris in 2005 the donor community (declaration on the effectiveness of development cooperation) agreed the following important points of departure: the consistent derivation of funding measures from the national development strategies of the partner countries; the coordination, harmonisation and division of labour with other donor countries; concentration on a smaller number of partner countries; and the focusing of all measures on the desired effects.

In order to achieve globally sustainable development, the Federal Government also builds upon close cooperation with civil society. Non-governmental players, especially non-government organisations, in both partner countries and donor countries, frequently have direct access to the target groups in developing countries. This proximity to ground level and the large variety of the experience of the players in civil society make them important partners, who complement the Federal Government's development policy and cooperation.

5. Protection and sustainable use of natural resources

The destruction of natural resources, which according to the results of the Millennium Ecosystem Assessment is advancing globally, particularly endangers the livelihoods of the poor in developing countries—and this is increasingly also due to the effects of climate change. The loss of the functions of the ecosystem further jeopardises the chances of achieving the MDGs. Against this background complying with the second management rule of the National Strategy for Sustainable Development on renewable and non-renewable natural resources (see Annexe, p. 207) takes on fundamental importance.

The networking and integration of developmental and environmental themes remains a central challenge for development policy. The need to handle natural resources with care, and support for developing and emerging countries in the reduction of greenhouse gas emissions and adaptation to the negative effects of climate change, are therefore important elements of a globally oriented sustainability policy which at the same time takes account of the aspect of poverty reduction.

Forests

Forests provide a central ecological balancing function worldwide, especially as a carbon store and an important regulatory mechanism in the water cycle. Moreover, with their wide variety of resources they also represent an important economic factor in many countries. Supporting our partner countries in the protection and sustainable management of forests is thus of central importance, and at the same time also serves to secure the livelihood of the (indigenous) populations in the forests in particular. The international agreement on forests, which was negotiated in 2007 during the German Presidency of the European Council and subsequently approved by the General Assembly of the United Nations, for the first time sets international cooperation in sustainable forest management in a—voluntary—framework which needs to be actively used in the future. The priorities for the German involvement in partner countries are in particular the fight against the illegal felling of timber and trading in illegally felled timber. Furthermore, Germany supports the development of new initiatives and financial instruments for the protection of forests as an element of an avoidance and adaptation strategy in response to climate change. The so-called Forest Carbon Partnership Facility (FCPF) amongst others supports this. This initiative was launched at the climate conference in Bali in December 2007. Its goal is to test pilot approaches to the creation of financial stimuli for developing countries when they protect their forests in the long-term and thereby contribute to reducing the greenhouse gas emissions which result from the destruction of forests.

Biodiversity

The loss of biodiversity (cf. also Chapter D.III.2.) impacts especially on the (extremely) poor in terms of their essential livelihood. It is precisely these people who are dependent upon natural resources: for their supply of drinking water, food, medicine, wood as a source of energy, the preservation of arable land and also as a source of income. In particular biodiversity displays a high potential for securing food for an increasing world population (cf. here also Chapter C.IV. above). The resolution passed by the Heads of State and Government at the World Summit for Sustainable Development in 2002, which called for a clear slowing down in the loss of biological diversity caused by human intervention by 2010, is thus an important step also in respect of achieving the MDGs. For this reason the Federal Government supports developing countries in the development and implementation of sustainable concepts for the protection and use of their natural resources. It is essential to create better harmony between concepts of protection and use,

in other words to safeguard both the preservation of biodiversity and sustainable economic and social development at the same time. For this purpose, on the occasion of the Ninth Meeting of the Conference of the Parties to the Convention on Biological Diversity in Bonn, the Federal Government announced the allocation of additional funds (a further 500 million euros between 2009 and 2012, and 500 million euros a year from 2013). The management of protected areas, access to genetic resources and the equitable offsetting of benefits, traditional knowledge, sustainable use of biodiversity, biological security and the interaction between biological diversity and climate change are central areas for action in the context of a global sustainability policy. The Federal Government supports the internationally agreed goal of establishing a global network of protection areas by 2010. In addition it is an active participant in the negotiations for the creation of an international regime for the equitable distribution of the benefits derived from the use of genetic resources. This is intended to be adopted in 2010 and to make an important contribution to creating added value for biological diversity, preventing biopiracy and combating poverty. The Federal Government equally supports the protection of forest resources worldwide and their sustainable use.

Water

Due to its direct effects in various sectors, such as health, nutrition, education, the environment etc. water is a real cross-sectional issue and plays a key role in sustainable development. At the same time the shortage of water has become a growing problem in many regions of the world. The causes are often insufficient political reactions to high population growth, rapid urbanisation, industrial development and the resulting environmental pollution, and also the expansion of irrigated farming.

This frequently has disastrous consequences for the soil and water resources through constant over-use and pollution, and in the medium term it can entail conflicts not only between various groups of water consumers but also between countries. In addition, in some regions the effects of climate change lead to exceptional periods of drought and flooding, which further increase the pressure on the available water resources.

In addition 1.1 billion people—a quarter of the world's population—still do not have reliable access to clean drinking water. 2.6 billion people today live without basic sanitation. Whilst the MDG goal for the supply of drinking water (halving the percentage of people without access by 2015) can probably be achieved on a global level (chiefly because of the progress made in India and China), this is unlikely to happen in respect of sanitary conditions. For this reason the United Nations designated 2008 the 'International Year of Sanitation'. The Federal Government explicitly supported this and is intensively involved in implementing the goals associated with this initiative. In addition, German development cooperation measures in the area of sanitation are being increased.

Germany is an important player in global water policy and is one of the three largest bilateral donor countries worldwide, with an annual support budget of approximately 350 million euros.

Climate

Most people in developing countries have only limited opportunities of protecting themselves against flooding, droughts or storm disasters. Existing environmental crises—such as the shortage of water—are exacerbated by climate change; the result is conflicts over land use and migrations. Against this background, in future the systematic networking of climate protection measures (cf. Chapter C.I.) and development policy must be further extended.

German development policy will be expanding and bundling its measures in support of developing countries in respect of climate change. In the context of the action programme 'Climate and Development', Federal Government spending on climate protection measures in developing countries in 2008 is around 900 million euros. Together with the revenues from the sales of emission rights, the German involvement in reducing greenhouse gas emissions and adapting to climate change in developing countries is over 1 billion euros in 2008.

Successfully combating poverty and economic development involve an increase in energy consumption in the developing countries. If this energy requirement is to be met as sustainably as possible, the use of renewable energy must assume a central role. The Federal Government is an important partner in the use of renewable energies, for example wind power in Columbia, solar cookers in Africa or decentralised small water power plants in Nepal, Indonesia and China. A contribution of 25 million euros to the 'Least Developed Countries Fund' in 2007 also supported these countries in adapting to climate change.

Example of measures with partner countries in the area of climate:

India: Support for the Indian government's programme for improved efficiency in the supply of electricity
Indonesia: Preparation of German-Indonesian cooperation for the protection of tropical forests as a carbon absorption measure
Brazil: Support for municipalities and businesses in the introduction of more efficient management of energy and the environment
The Pacific: Advice on adaptation to climate change at the 'Pacific Islands Forum Secretariat' in Suva, Fiji

6. Sustainable structuring of world trade

Greater integration of the developing countries into world trade and consideration of ecological and social constraints in the structuring of the international trade system are central aspects of globally sustainable development, and core elements of the implementation plan adopted in Johannesburg in 2002 (cf. here also the sustainability indicator 'Share of expenditures for official development assistance in gross national income'). Differing degrees of progress can be observed in these goal dimensions.

It is the explicit goal of the Doha Development Round of the World Trade Organisation (WTO) to push ahead with the integration of the developing countries into the multilateral trade system; unfortunately it has not yet been possible to bring the negotiating round to a successful conclusion. Some interim successes, which remain subject to overall agreement, were achieved at the Conference of Ministers in Hong Kong in 2005, in which Germany participated. Amongst other things a development package was adopted which can make an important contribution to sustainable development. Agricultural export subsidies are to be abolished generally by the end of 2013 and the least developed countries are to receive free access to the markets in all the industrial and emerging countries. World markets which have been further equalised in this way can substantially contribute to sustainable development in the poorer countries.

Open markets, fair trade conditions and a multilateral trade system are important prerequisites for the developing countries being able to use the newly growing opportunities for economic globalisation—but experience has shown that they are by no means sufficient. For this reason the industrial countries have also agreed to increase their trade-related development cooperation (Aid for Trade) to 4 billion US dollars by 2010. The EU and the member states alone will together contribute 2 billion euros for this from 2010. Under the German EU Council Presidency, the EU developed an implementation strategy for this commitment which was approved in October 2007. In the past Germany was the second largest bilateral donor of trade-related development cooperation, and this will also assume a prominent role in the future.

The linking of ecological goals with liberalising measures is also a subject of the Doha Development Round, for example in the negotiations on special reductions in customs duties for environmental goods and services or in the negotiations on special rules for fishery subsidies. The Federal Government is of the opinion that sustainability aspects must increasingly be taken into consideration in future world trade rounds.

The Federal Government is also endeavouring to introduce sustainability goals in the context of negotiations on bilateral free trade agreements. This applies in particular to the ongoing negotiations between the EU and South Korea, India and the ASEAN countries. In the context of the EU trade and development policy a first comprehensive economic partnership agreement was successfully concluded with the Caribbean countries (CARIFORUM). This goes beyond questions of market access and also includes trade-related topics which could provide important impulses for regional trade and regional integration overall. In addition it includes a self-contained chapter on social aspects. Here the negotiation partners have agreed to recognise and implement the basic social standards of the International Labour Organisation (ILO). A consultation mechanism is to be set up to keep track of changes in this area. The same applies to the area of the environment. Only interim agreements limited to the trading of goods have been concluded with the other regions of the African, Caribbean and Pacific Countries (ACP). These interim agreements must be further negotiated in the coming months until regional and comprehensive economic partnership agreements are obtained. Germany is committed to this.

Another contribution which trade policy can make to sustainable development and which the Federal Government regards as especially important is the general preference system of the EU, with its additional customs preferences for developing countries which are willing to comply with defined minimal standards of human rights, social security and environmental protection. The Federal Government advocates making the application periods for this preference system more flexible in

future so that developing countries which satisfy the criteria are able to apply promptly.

Finally, there is inherent potential in fair trade for combating poverty and structuring globalisation equitably. At present some 1.6 million producers benefit from fair trade—or more than 5 million people if family members are included in the calculation. The increase in sales in the last few years (+154% between 2000 and 2005) is gratifying. The information campaign on fair trade between 2003 and 2007, 'fair feels good', which was sponsored by the Federal Government, contributed to making fair trade better known among broad sections of the population and to substantially increasing sales levels.

The subject of sustainable trade in raw materials will be fully dealt with in a dedicated chapter (C.II.).

7. Support for economic growth and investments

Many developing countries are presently experiencing a remarkable growth process. African countries for example have achieved an average growth rate of just under 5% in the last few years. But in order for economic growth to be sustainable and broadly effective, outline statutory and institutional conditions are needed to enable efficient business practices. The Federal Government is active in providing support here in the context of its development policy.

Investments in support of development are an important prerequisite for economic growth and the fight against poverty. The focus of the German programme is on improving the business and investment climate, providing easier access to financial services and supporting professional qualifications for the workforce. The most important aspect is the improvement of legal, administrative and institutional framework conditions which often impede investments. It is essential to take account of ecological, gender-specific and social aspects, for example core labour standards, in order to guarantee sustainable success in economic trade. In the centre of all reform measures is the integration and participation of all the groups affected (private sector, civil society, public sector). The Federal Government currently supports funding programmes for sustainable economic development in 43 developing countries with approximately 400 million euros a year.

The German G8 Presidency in 2007

Support for socially and ecologically sustainable investments in Africa is a fundamental concern of the Federal Government. This was echoed in the initiatives adopted in Heiligendamm:

- The G8 countries initiated a dialogue with their African partners in support of 'Good Financial Governance', in other words transparency and accountability in public finances.
- The G8 countries support the strengthening of the financial sector in the African partner countries both bilaterally and together with African partners in the context of the initiative 'Making Finance Work for Africa', and thus also support improvements in access to adequate financial services for both households and businesses.
- The G8 countries furthermore support activities for the improvement of the business and investment climate in Africa through the Investment Climate Facility (ICF).

Corporate Social Responsibility also makes an important contribution to a global strategy for sustainable development. In cooperation with the Federal Government, internationally active businesses are for example developing health care programmes in the workplace, high social and ecological standards or in cooperation with other companies are providing intercompany training and further education programmes at their production facilities in developing countries. The OECD guidelines for multinational companies, the core labour standards of the ILO and the 'Global Compact' of the United Nations constitute the international frame of reference for corporate social responsibility. Moreover, there are also a large number of CSR activities and initiatives in existence, some of which specialise in individual sectors (see Chapter C.II.2.e. on the raw materials sector), and the ISO standardisation project 26000 for the social responsibility of organisations, which aim at global expansion and increasing implementation of CSR.

8. Conclusion

After observable past successes the Federal Government has set itself an ambitious agenda in pursuit of globally sustainable development. Since the last Progress Report, important processes have been set in motion, for example in the context of the German Presidency of the G8 in 2007. Achieving the MDGs remains the central challenge. Major fields of action here are safeguarding ecological sustainability and creating a global partnership. The implementation of the ambitious development policy for the climate action programme, the increase in development financing (also for the growing demands in terms of climate protection and adaptation to climate change) and the successful adoption of the Doha Round are important steps in this. The question as to whether the necessary

adaptation to climate change will be successful, especially in the poorer countries, is equally central. The focus of the Federal Government's attention in all areas is Africa. The deciding factor for positive development in the next few years will be substantially anchoring sustainability not only in the development agendas of the partner countries but also in the donor countries and institutions. To this end the Federal Government will make use of coherent policy in order to continue to implement the 2005 Paris declaration on effectiveness in development collaboration.

VII. General and professional education

Against the background of globalisation and demographic development, education and professional qualifications are decisive keys for the future. Technology-intensive industries and knowledge-based services are booming, and knowledge is growing at a dramatic rate worldwide. It is only possible to guarantee sustainable economic growth with a well qualified skilled workforce. This applies especially to a country which is poor in mineral resources like Germany.

For this reason, as a matter of provision for the future everyone in German must be able to cultivate their skills and talents, and continue to develop them throughout their lives. Only when people are well qualified for the demands placed upon them by the labour market of tomorrow can growth, employment, social security systems and prosperity be guaranteed.

At the same time education plays a decisive role in implementing the guidelines for sustainability throughout society, especially in resolving conflicts between technical, economic, ecological and social goals. The objective of education for sustainable development must be to provide each individual with the knowledge, competence and values which are necessary for shaping a humane future.

The Federal Government's qualification initiative

The Federal Government and the *Länder* are in agreement that further efforts are needed to secure a skilled worker base. For this reason the heads of the Federal and *Länder* governments agreed in December 2007 that by the end of 2008 they would jointly design a 'Qualification Initiative for Germany'. This consensus is an important signal for the joint responsibility of the Federal and *Länder* governments for the educational system.

In January 2008 the Federal Government approved the qualification initiative 'Getting Ahead through Education' and thus set the direction for its sphere of responsibility, including the first concrete measures and proposals, which now need to be discussed with the *Länder*, business and social partners, and subsequently implemented. The main points are:

- **More educational opportunities for children under six years of age:** Education does not only begin in school. Day care centres are places of education in early childhood and thus complement the family. Here abilities can be encouraged at an early stage, and disadvantages can be spotted and dispelled in good time. This is why by 2013 a place in a day care establishment or a private home offering day care is to be available for one child in three. The measures by the *Länder* to improve the quality of learning, education and day care will be supported by the Federal Government, amongst other things through a further education initiative for pre-school teachers and other day care staff.

- **Every branch of education should lead to a qualification:** School and professional qualifications are the basis for success in the workplace. However, many young people, especially those from an immigrant background, do not successfully complete their education. For this reason the Federal Government will be supporting the efforts of the *Länder* to halve the number of premature school leavers by means of targeted measures at the interface between school and training. Among other things, the federal programme *Perspektive Berufsabschluss* ('Perspective: Vocational qualifications') will contribute to consistently reducing the percentage of adolescents without a vocational qualification.

- **Improving the educational opportunities for young people in need of special support:** An important goal of the concept *Jugend – Ausbildung und Arbeit* ('Young people—education and work') within the Federal Government's qualification initiative is to create 100,000 additional opportunities by 2010 for previous applicants for apprenticeships or other vocational training who are in need of support. For this purpose, a training bonus and support for entry into the labour market will be introduced into the Third

Book of the Social Code. The training bonus is to be paid by the end of 2010 to employers who make additional apprenticeships available in their companies for young people in need of support who have already been looking for an apprenticeship for some time. The basic principle, that business itself bears the responsibility for training its own young skilled workers, remains unchanged. Support for entry into the labour market will take the form of individual support for young people in their transition from school to vocational training. Support in the form of a job training allowance for a second phase of vocational training, by means of a discretionary benefit, may be offered if permanent professional integration would not otherwise be achievable but appears likely to be achieved by means of this second training phase.

- **Getting ahead through education:** In Germany in particular, social origin is largely decisive for success in education. For this reason transparency between the various branches of the educational system must be clearly increased, and more routes for getting ahead by means of vocational training and professional experience need to be made available. The Federal Government will therefore amongst other things introduce career progression grants for young adults who take up a university place after completing their vocational training and acquiring professional experience, as well as further developing support for advanced vocational training, the so-called *Meister-Bafög* ('master craftsman traineeships'). In addition, the range of scientific further training and extra-occupational courses will be extended.

- **Making the transition from school to university easier:** The high birth-rate amongst the generation who will be eligible for university in the coming years offers an excellent opportunity. The Federal Government has set itself the goal of encouraging 40% of each year group to go to university in future. Markedly improved educational support through a corresponding increase in the basic grant rate and personal allowances has already been approved, in accordance with the legislation under the *Bafög* ('Federal Education and Training Assistance Act'). In order to increase the number of university places on offer, the Federal Government and the *Länder* have also agreed the 'Higher Education Pact', which will create an additional 90,000 places by 2010. In addition, the intention is to make better use of existing student capacities and provide university places in a more focused way.

- **More attention to technology and natural sciences:** Sufficiently qualified new blood in the subjects mathematics, IT, natural sciences and technology (MINT) is crucial for guaranteeing the high level of our innovation capacity and economic growth. However, a shortage of skilled workers is already apparent in some sectors and regions. A number of companies are reporting difficulties in recruiting for certain fields. This lack of more highly qualified employees will be further intensified by demographic change. The Federal Government is therefore going to increase young people's interest in these so-called MINT professions through the introduction of a *Freiwilliges Technisches Jahr* ('Voluntary Technical Year') and provide targeted support to increase their willingness to opt for technology or natural science subjects in the decisive phases of their professional orientation. This is also intended to contribute to lowering the high dropout rates among students of these subjects.

- **Increasing opportunities for women:** Women possess many of the prerequisites for top managerial positions: in comparison to men they have higher school-leaving certificates with better marks, and are successful in both vocational training and studies. Nevertheless, they are not proportionately represented in leading positions in business, science and administration. One reason for this is that the choice of professions open to them is still limited by gender-specific criteria. The Federal Government has adopted a series of initiatives and measures to increase the representation of women especially in management positions, the MINT professions and university professorships.

- **Further training:** In comparison to other European countries the Federal Republic of Germany enjoys a well developed further training structure, for which the *Länder* are responsible. The *Länder* have specified their further training structures and goals by means of both further education legislation and concepts at *Länder* level. Continuous lifelong learning is becoming increasingly important, yet participation in further training is stagnating. For this reason the Federal Government and the *Länder* have set themselves the goal of increasing the further training participation rate in Germany from the current 43% to 50% by 2015. The Federal Government and the *Länder* aspire, in cooperation with municipalities and social partners, to strengthening and bundling appropriate measures in the context of a further training

alliance. The Federal Government and the *Länder* will in particular support the development of regional further training structures and with the introduction of an 'educational premium' will also create financial incentives for increased participation in further training.

- **Development of empirical research in education:** In November 2007 the Federal Government published its framework programme for the support of empirical research in education, and together with the President of the Standing Conference of Ministers of Education and Cultural Affairs presented it to the public. The goal of the framework programme is to strengthen the structure of empirical research in education in Germany. Through support for research in the central themes of educational policy—for example, the diagnosis of language competence and (individual) language teaching, classroom teaching design and professionalisation of teaching staff, as well as system control—comprehensive new control knowledge will be made available in the medium term to those with responsibility in the area of educational policy. Central elements of the programme include the thematic focus of 'competence diagnostics and technology-based testing' and—in coordination with the *Länder* and the German Research Foundation—the planned establishment of a national educational panel. This entails a broad-based longitudinal study around the concept of competence development throughout life, by means of which extensive data on learning throughout one's lifetime will be collected and differentiated findings on educational processes and the major influencing factors can be obtained.

VIII. Research and development

1. Research for competition and global responsibility

Germany currently faces major challenges: In a globalised world it is vital not only to preserve and develop our competitive ability and our economic performance, but also to accept responsibility for our continuing high consumption of energy and raw materials, and develop intelligent solutions for both using these and opening up alternative resources.

Relying on proven and available technologies and concepts along the way is nowhere near sufficient. Instead we must mobilise our creativity and spirit of invention. The key to this is investment in research and development.

During Germany's EU Presidency and Chairmanship of the G8 in 2007, the focus of German policy in terms of content was on the subjects of climate protection, environmental protection and handling raw materials responsibly. This is also reflected in Germany's R&D policies.

2. How innovative is Germany?

With the Lisbon Strategy, which was adopted in 2000, the European Community set itself the ambitious goal of making Europe the 'most competitive and dynamic knowledge-based economy in the world' by 2010. In concrete terms every member state must invest 3% of its GDP in R&D by 2010. Up to now the Community has failed to hit its target; between 2000 and 2005 the R&D percentage stagnated at 1.9% in the EU-15 and at 1.4% in the EU-25. Germany is clearly above the European average at 2.5% (2006). Unlike many other countries Germany has also been successful in the last few years in consistently increasing R&D investment: the German budget for 2008 includes a federal share for R&D of 2.7%, which will probably prove necessary.

After years of stagnation, the German economy is once again investing more in research and development. In 2006 it invested 41.1 billion euros in R&D activities. Branches of industry such as optical technologies want to increase their R&D efforts by more than 10% by 2010. The environmental technology sector is an especially research-intensive branch of the economy. In terms of the percentage of environmental R&D in relation to gross domestic product, Germany is at the top of the OECD countries and has traditionally assumed a leading position in the export of environmental technologies. In 2004 Germany once again succeeded in wresting the title of 'export world champion in environmental protection' away from the USA. R&D expenditure in the environmental area stagnated in the 1990s, but in the last few years, especially in the areas of energy and climate protection, an increase has again been apparent.

3. Federal Government activities

High-Tech Strategy

The Federal Government's High-Tech Strategy was adopted in 2006 and makes a total of 15 billion euros available for R&D by 2009. It follows three central approaches: it opens up leading markets, links business and science in order to bring new

products and services onto the market more quickly, and improves outline conditions across technologies to give researchers and innovators more freedom in developing their ideas. In 17 areas of innovation—ranging from research in health via environmental technology right through to microsystem technologies—it consolidates the strengths of German business and science. With the first interim results in 2007 new focal areas were established, especially in health, the protection of the climate and resources, mobility and security.

Under the 'High-Tech Strategy on Climate Protection' in 2007, additional new priorities were established in R&D for the benefit of energy- and resource-saving technologies, in order to contribute to the implementation of ambitious German and European climate protection goals.

Research areas within the 'High-Tech Strategy on Climate Protection'

- The fundamental areas of climate research are to be systematically opened up in order to develop the knowledge base. Here the development of reliable medium and long-term climate scenarios and climate predictions, which have been lacking up to now, plays a part, as also does the formulation of basic principles for measures for adapting to climate change.
- Areas of potential are to be opened up on a broad basis and with all relevant sectors of the economy. As well as the four innovation alliances mentioned below, others are therefore also in preparation.
- Knowledge in respect of climate protection needs to be made usable. The targeted processing of knowledge for decision makers will be expanded in cooperation with research facilities and the meteorological service. A new Climate Service Center will consolidate the information on climate change which is available on a decentralised basis, and make it available as needed.
- In acknowledgement of Germany's global responsibility, research activities are internationally oriented. Emerging and developing countries are to be supported above all in the supply of energy and in adapting to climate change.

At the Second Climate Research Summit in Berlin in October 2007, four innovation alliances were presented, on the topics of photovoltaics, innovative energy storage, optimal coordination of automotive components, and optimisation of traffic flow. The Federal Government is supporting these four alliances with more than 220 million euros, whilst the industrial partners are providing 1.2 billion euros. An additional alliance, the 'Finance Forum: Climate Change', was established at the Second Climate Research Summit by leading financial service providers.

Example: Lithium ion battery innovation alliance

Stationary storage makes the storage of large amounts of energy possible, which is important in the use of regenerative energy such as wind power turbines. Only in this way can the dissipation of unused energy be avoided in the future—thus in 2006 around 15% of the energy generated by wind turbines was not fed into the energy grid and was thus lost to use.
A five- to tenfold increase in the energy and performance density of energy storage systems is needed. This can be achieved using lithium ion technology.
The goal is the development of a new generation of higher performance and at the same time safer, affordable and lightweight batteries. They support the wider use of regenerative energies, for example for interim energy storage in wind power installations and for the use of energy efficient hybrid and electro-drive technologies in motor vehicles. An important focus here is the development of new alternative electrode and separator materials as well as electrolytes and conducting salts. For this reason the Federal Government is making 60 million euros available, and a further 360 million euros has been pledged by industry.

The High-Tech Strategy has not only established thematic focal points, but also focuses its support on particular players: the Federal Government is providing 300 million euros in support of innovative small and medium sized companies. In the context of the 'SME innovative' initiative which was launched in 2007, access to research funds will be made easier for this target group via simplified and accelerated application processes and firm deadlines. This will be supplemented through the contest between clusters of excellence which was announced in the same year. In each of three rounds of the contest, up to five regional clusters of excellence are to be chosen which can be funded for a maximum period of five years with a total of up to 200 million euros.

Fona

The framework programme *Fona* ('Research for sustainability') was launched in 2004 to run for five years with a budget of 800 million euros. The goal of the framework programme is to support innovative technologies and strategies for sustainable development in four fields of action (business, regions, resources and society). In almost four years more than 1,000 projects have been initiated. The research subjects which have been tackled include the entire spectrum of issues relevant to sustainability—from integrated protection against flooding through water management in developing countries, cross-sectional technologies for sustainability in business and adaptation to climate change, right through to the contribution made by business and the humanities to sustainability.

The organisation of cooperation with other departments in anchor countries (for example, Mexico, Brazil, China, India, South Africa) makes it possible to dovetail the scientific and technological cooperation with developmental cooperation. A first positive example can be reported from Mexico. There through an initiative jointly borne by two departments, a master's degree course on urban and industrial environmental protection/energy policy has been established. Further concrete initiatives are planned for 2008 in Brazil, a pilot country in terms of cooperation, as well as in other anchor countries.

Innovations as keys to sustainable development

Innovations which enable businesses to save both costs and materials are especially effective when they can be applied as interdisciplinary technologies in various branches. With the support measure *Innovationen als Schlüssel für Nachhaltigkeit in Business* ('Innovation as keys to sustainability in business') interdisciplinary technologies of this kind have been developed since 2004 in close collaboration between research institutions and businesses. A Fraunhofer Institute for example is working on the further development of micro-filters which enable high flow rates despite a high level filter effect, and can be used in both food production and water purification.

As well as the focal areas in terms of contents, *Fona* also focuses on qualitative further development of research. This includes handling questions of relevance to applications and policy, interdisciplinary cooperation between natural sciences and the humanities, and also cooperation between scientists and players outside science (especially businesses, NGOs, municipalities).

The approaches and goals of *Fona* have become a model at European level: in 2006 the European Commission presented its 'Renewed EU Sustainable Development Strategy'. The goals and characteristics of 'research for sustainability' mentioned in this correspond to the goals established two years previously in *Fona*.

The role of research in the EU Sustainable Development Strategy

'Research into sustainable development must include short-term decision support projects and long-term visionary concepts and has to tackle problems of a global and regional nature. It has to promote inter- and trans-disciplinary approaches involving social and natural sciences and bridge the gap between science, policy-making and implementation.'

With the increasing importance of climate change on the political agenda, climate research has also been expanded within *Fona*. The research approaches encompass the fundamental principles in order to better understand the causes and extent of climate change, research on options for action in order to reduce greenhouse gas emissions, and the development of adaptation strategies for society and business in terms of the consequences of climate change. By the end of the legislative period, 255 million euros had been made available.

'Environmental Technologies Master Plan'

The 'Environmental Technologies Master Plan' was jointly signed off by two departments in 2008. The goal of the master plan is to open up the lead market of environmental technology for German business and to improve the conditions for the development and use of new environmental technologies. It is important to make new technologies available in order both to stimulate demand for them domestically, and to guarantee export opportunities for them on the expanding world markets. The master plan lays its main emphasis on the themes of climate protection, the conservation of resources and water technologies. According to a current study the world market volume of the lead market in environmental technologies in 2005 was estimated at 1,000 billion euros, and this was predicted to develop further to around 2,200 billon euros by 2020 with a growth rate of 5.4% per year. The largest absolute increase in the market volumes is expected to be in the lead markets for energy efficiency and sustainable water management.

The master plan combines thematically focused funding activities with measures in the areas of standardisation, education and training, along with networking on a European level. Thus in the future a system for monitoring the regulatory impact is to be introduced, which will shed light on national environmental legislation from the perspective of innovations policy.

'Innovation and new energy technologies' research programme

On 1st July 2005, the Federal Cabinet approved the fifth energy research programme, 'Innovation and new energy technologies'. The programme forms the basis of the Federal Government's support policy in the coming years and replaces the previous programme from 1996. The goal is to drive forward the transition to a sustainable energy supply by means of innovation and technical advances.

In 2007 the Federal Government provided 440 million euros in total for new research projects. The focal points of the funding were applied research projects in the areas of power plant technology, fuel cells, energy-conserving construction, photovoltaics, wind and bioenergy, geothermal energy, low-temperature solar energy, network integration and optimisation of the energy supply systems, as well as interdisciplinary questions.

Examples of activities

- An important research goal is increasing energy efficiency on the supply side. Under the name COORETEC, together with science and business ways are being sought to reduce greenhouse gas emissions in the generation of energy from fossil energy sources. Above all the goal is to increase the level of effectiveness of traditional power plants. The efficient handling of traditional energy resources will increase both the economic efficiency of the installations and their environmental friendliness. This initiative received over 20 million euros of funding in 2007.
- It is not only in the production of energy and heat that the economical handling of finite resources plays a large role. Above all the consumption of such resources offers great potential for efficiency. Under the catch word *Energieeffiziente Schule* ('Energy Efficiency in School') a new research initiative has been launched jointly with business, science and the municipalities. The focus is on demonstrating and testing new innovative energy technologies. In parallel pupils are taught how to handle energy appropriately. This initiative is intended to mobilise a funding volume of around 27 million euros, 16 million of which will come from public funding.
- The Federal Government is supporting research projects in the first German offshore wind park 'Alpha Ventus', by providing around 50 million euros over a period of five years. In the context of the RAVE (research at Alpha Ventus) initiative, fourteen projects have already been granted over 16 million euros.

In order to further speed up the innovation process, the Federal Government will strengthen current activities in energy research as well as launching selected new initiatives and further increasing expenditure on research in the area of modern energy technologies. The amount set aside in the budget for 2008 is 506 million euros.

The energy research programme has enabled medium-term observable successes in protecting the climate. Incidentally, the programme is also reinforcing growth and employment in Germany and through the export of high-efficiency energy technologies offers an effective contribution to the protection of the earth's atmosphere which is needed globally.

The Federal Government is also financing research in the agriculture, forestry and fisheries sectors, which operate using natural resources and have been particularly hard hit by climate change. The goal in particular is the further development of sustainable uses (climate protection, biodiversity, protection of plants, eco-accounting), adaptation to climate change and improving the competitiveness of environmentally friendly production through innovation and in the aim of further developing renewable raw materials. In order to reinforce the use of biomass as energy, in 2008 the Federal Government established the German Biomass Research Centre in Leipzig.

Bearing in mind the goal of consolidating the budget, the Federal Government is adhering to the 3% goal in the Lisbon Strategy. In this, budgets in future years will take the development of gross domestic product into consideration. Altogether in this legislative period a 6.5 billion euro expansion of the R&D budget is planned. Research on sustainability will also be continued after 2009 and bundled within an framework programme. In this context the emphasis will be on the international orientation: research alliances with countries which are currently developing particularly dynamically will on the one hand satisfy Germany's global responsibility and on the other hand help to identify and develop international markets. Basic research and applied research will be dovetailed even more strongly than up to the present, in order for innovative solutions to be developed which will meet the global challenges of climate protection, sustainable energy supply and shortages of resources.

IX. Financial and economic instruments

In implementing the Strategy for Sustainable Development the Federal Government places emphasis on efficient instruments. An important prerequisite for sustainable development is transparent markets with prices which reflect the economic, social and ecological costs of goods and services. With market based instruments, such as taxes and duties or certificate trading, the appropriate price signals can be set for this purpose. These instruments are especially suitable for combining effective environmental protection with the requirements of an economic policy geared towards growth and employment. In addition market based instruments as a rule influence public budgets. Therefore, their choice and design is a matter of great importance for financial policy.

The Federal Government explicitly places the emphasis on market based instruments in its

National Strategy for Sustainable Development. Examples of this are trading in emissions certificates and ecological tax reform.

Emissions trading

With the successful introduction of emissions trading in 2005 the total emissions rights available to energy installations were limited in terms of quantity. In this way CO_2 emissions acquired a market price for the first time. The companies taking part in emissions trading have a choice between reducing CO_2 emissions and purchasing emissions certificates; if the specific avoidance costs to the company are below the price of the certificate, the company will invest in avoidance technology; otherwise it will decide to buy certificates. Measures for reducing emissions within the area covered by emissions trading are thus carried out immediately where they are most cost-effective.

In 2008 the second trading period of the European emissions trading system began. The regulations for Germany between 2008 and 2012 are established in the *Zuteilungsgesetz 2012* ('2012 Allocation Act'), which has laid down an ambitious goal for CO_2 reductions. This will guarantee that the energy sector and industry will make an appropriate contribution to maintaining the German climate protection goal for 2008–2012. The allocation for energy installations takes place on the basis of a benchmark system which rewards efficient installations and penalises obsolete technology. In this way additional incentives are created for the process of modernising the German energy sector. Fewer reductions in emissions reductions are required from production industries than from the energy sector; this differential treatment of sectors takes account of their differing competitive situations. Companies which emit small amounts of pollutants are also exempted from contributing to reductions. Around one tenth of the total allocation amount, namely 40 million entitlements a year, will no longer be distributed free of charge, but rather sold. With this sales quota Germany occupies first place in the EU. From the revenue obtained, in the 2008 federal budget up to 400 million euros will be allocated for support programmes in the areas of climate protection and energy efficiency. Up to 280 million euros of this can be used for national measures and up to 120 million euros for international measures which strictly correspond to the development policy measures. The goal of the climate protection initiative is to cost-effectively realise national and international potential for climate protection, adaptation to climate change, energy efficiency and renewable energies, as well as to promote innovative model projects. In addition, Germany wants to use it to give new impulses to the negotiations for an international climate protection agreement after 2012.

Ecological tax reform

The ecological tax reform came into force in Germany already back in 1999. Unlike emissions trading, here the State does not specify the level of emissions, but instead increases the price. The increase in the prices of petrol, heating oil and electricity as a result of taxation has placed a burden on energy as a factor, and thus created incentives to make savings on energy. In return, a burden was lifted from work as a factor because the additional tax revenues enabled increased expenditure by the Federal Government on statutory retirement insurance amounting to almost 16 billion euros a year, which in particular stabilised the rate of retirement insurance contributions. Consequently this reform made an important contribution to improving the outline conditions for the labour market. Through the reduction in tax rates and the decrease in the employers' contribution to retirement insurance, a substantial strain has been taken off German industry.

E

Sustainability in the German Bundestag —Contribution of the Parliamentary Advisory Council on Sustainable Development—

Berlin, 29th May 2008

Sustainability must be the guiding principle of German politics. When sustainability is understood to be an interdisciplinary political and social task, it can become the driver of innovation. The Strategy for Sustainable Development is a strategy for the future.

The principle of sustainable development affects all areas of politics. Technological, economic and social progress must be measurable against this principle. With the work of the Parliamentary Advisory Council for Sustainable Development, the German Bundestag is making a concrete contribution to the dissemination and consolidation of sustainable development.

I. The functions and activities of the Parliamentary Advisory Council on Sustainable Development

1. Constitution, authority and functions

The Parliamentary Advisory Council on Sustainable Development (the Advisory Council) was established in the last legislative period and has been reconstituted in the current 16th legislative period. In this legislative period the Advisory Council consists of twenty members of the Bundestag. With the Advisory Council, the German Bundestag has created a body at parliamentary level which stands face to face with the institutions on the government side. The existence of the Advisory Council has strengthened Parliament's active role in the debate on sustainability and future viability.

Under the resolution appointing it, the Advisory Council has the following tasks:

- Parliamentary support for the Federal Government's National Strategy for Sustainable Development and the EU Sustainable Development Strategy
- Debate on discretionary points of interest and the submission of the resulting reports and recommendations to the pertinent committee of the German Bundestag
- Preparation of expert statements on draft bills or other parliamentary submissions
- Maintaining contacts and debating with other parliaments, especially those in the EU, for the development of joint positions on sustainable development
- Support for public discussion of sustainable development and facilitation of coordination between various social groups.

The Advisory Council sees its role as being a joint creator in implementing the goals of the national sustainability. Its work aims as well as possible to consolidate sustainable development from environmental protection, economic performance and social responsibility with the interests of coming generations, and to represent these areas in the German Parliament.

The members of the Advisory Council see the long-term view as the topmost premise in their work. Resolutions are passed as unanimously as possible, as a policy for sustainable development is a long-term task which cuts across individual policy areas and extends beyond current election periods and the conflicts of everyday political life. A consensus of all political parties is therefore a basic prerequisite in the German Bundestag, so that even if the particular political constellation changes the continuity of the work can be guaranteed. Previous parliamentary cooperation has shown that this goal has not been set too high. A variety of resolutions, statements and reports have been passed either unanimously or with only isolated dissenting votes.

2. The Advisory Council in dialogue

The institutions on the federal level, the State Secretary Committee, the Sustainable Development Council and the Parliamentary Advisory Council on Sustainable Development, provide an excellent point of departure for a dialogue on sustainable development in Germany. However, the Advisory Council is of the opinion that cooperation can be improved by means of regular direct exchanges, setting joint focal points and the continual flow of information.

The Advisory Council welcomes the fact that sustainability strategies exist on the federal and State levels, in the municipalities and also within the European Union. It is, however, still necessary to improve coordination between the federal level and the *Länder* beyond the previous form of reporting by the *Länder*. In the opinion of the Advisory Council, additional opportunities for comparison and coordination in addition to the existing cooperation between the federal level and the *Länder* within the Conference of Environmental Ministers would make sense, both for the purposes of more harmonious coordination and further development of sustainability strategies, and also for identifying joint areas of action. This is because in order to improve the effectiveness of the National Strategy for Sustainable Development, effective networking and cooperation between the Federal Government and the *Länder* are essential, both in developing and implementing the Strategy.

Sustainability is not merely a matter for politics. Beyond the parliamentary context, the Advisory Council would also like to be a communication platform for other players in the area of sustainability. The Advisory Council seeks a social dialogue in order to breathe life into the Strategy for Sustainable Development. This needs everybody who is active in political life, companies, experts and innovators, and also all our citizens to work together. The Advisory Council is already leading this dialogue and offers the Federal Government its close cooperation.

3. Contact and discussions with other parliaments—the international and European dimension of sustainable development

In order to keep in contact and hold discussions with other parliaments and international players, as well as in order to support the EU Sustainable Development Strategy, the Advisory Council has organised several trips by delegates to various countries in order to discuss the contents and the processes of sustainable development. In this context the attention was on both the interests of countries such as Great Britain, Finland and Sweden, where a professional sustainability strategy has been underway for several years, and also on countries such as Spain and Portugal, where this process is still in the early stages.

It has become clear that across Europe the term ‘sustainable development’ still means a wide variety of different political approaches and options for solutions. One goal of the EU Sustainable Development Strategy therefore needs to involve encouraging the national sustainability strategies to be combined and supporting the sustainability dialogue across countries. In 2005 the Advisory Council released an expert statement on the EU Sustainable Development Strategy.

At this year's foreign affairs meeting of the Advisory Council in Brussels, the main theme was updating the EU Strategy for Sustainable Development. In discussion with the Secretariat-General of the European Commission the delegates examined the existing problems, mainly relating to time, in the involvement of the German Bundestag in the European updating process.

The delegates to the Advisory Council therefore suggested that in particular in the case of the Strategy for Sustainable Development orientated towards the long term, the deadline for participation should be markedly extended.

II. Current activities of the Advisory Council

1. Sustainability impact assessment

The Council is of the opinion that in the interest of sustainable development, political boundaries between departments must be overcome, and sustainability must be freed from the time constraints of legislative periods and recognised as a basic principle of politics. In order to do justice to this long-term and cross-department requirement for sustainable development, changes in the legislative process are necessary. The Advisory Council recommends the introduction of a sustainability impact assessment. As a central and integral part of a regulatory impact analysis, alongside the fiscal consequences, the medium and long-term ecological, economic and social consequences also need to be indicated.

In the 16th legislative period the Advisory Council has conducted two hearings on the themes of the balance between the generations and sustainability impact assessment. As a result in March 2008 the Advisory Council took the first step of passing recommendations to the Federal Government on including a sustainability impact assessment in the legislative process:

The current version of § 44 of the *Gemeinsame Geschäftsordnung der Bundesministerien* ('Joint Rules of Procedure of the Federal Ministries') is to be expanded to include sustainability criteria. In this paragraph the legislative consequences which must be shown in the justification section of a legislative proposal are defined. To date, an illustration of the points relevant to sustainability has not had to be provided.

In its resolution, the Advisory Council further recommends a change to § 47 of the above-mentioned Joint Rules of Procedure, such that as well as the addressees listed here who must receive early notification of draft bills, the German Parliament should also be included. This early notification would give it the opportunity of introducing a supplementary analysis of the regulatory impact in good time to take account of the criteria of sustainability.

Irrespective of this resolution, in order to further optimise the legislative process and taking account of its evaluation of the hearings on the balance between the generations and sustainability impact assessments, within this legislative period the Advisory Council will also present a report with appropriate recommendations.

2. Management system

If we seriously want to push ahead with sustainable development, then anticipatory assessment of the legislative impacts on its own is not sufficient. Sustainable development as a guiding principle must also be expanded in the form of a management system on all levels, both in the work of the Federal Government and also in the work of Parliament. This includes agreement on concrete goals which make the need for action clear along with regular evaluation of development, in other words a system of monitoring and controlling the political decisions which reports on progress and adapts the goals in respect of changing priorities. Such a system requires fixed schedules, clear procedures and accountabilities.

This is because in the view of the Advisory Council, one reason why the German Strategy for Sustainable Development has failed to become sufficiently anchored in day-to-day politics is a lack of commitment and a

failure to assign political responsibility for individual goals. The Advisory Council would welcome a situation where the Strategy for Sustainable Development could be better anchored through more precise designation of responsibilities.

The Federal Government's Progress Report, which appears on a regular basis, and the Indicator Report published in 2006 are helpful instruments in the management of sustainability. They support endeavours to make politics transparent and verifiable. However, over and above this and as well as the reports, increased attention must also be paid to implementing the goals which have been established and the measures which have been announced, as a permanent ongoing task.

3. Demographic change and sustainable infrastructure

The Advisory Council welcomes the fact that the Federal Government has incorporated the theme *Demografischer Wandel – Chancen für einen stärkeren sozialen Zusammenhalt* ('Demographic Change— Opportunities for stronger social cohesion') as a focal point in the National Strategy for Sustainable Development. In contrast to the First Report *Perspektiven für Deutschland* ('Perspectives for Germany') from April 2002, the problems of ensuring general public services, such as the social and technical infrastructure, are also addressed.

The Parliamentary Advisory Council started dealing with this issue in the 15th legislative period. In its *Wegweiser Nachhaltigkeit 2005* ('Landmark Sustainability 2005') the Federal Government specified the first task areas in which politics and society face major challenges: In the future too an appropriate quality of life and participation in social life must be guaranteed. This includes transport connections, schools and medical provision, as well as shops which satisfy daily shopping needs and recreational facilities. The offerings should be geared towards regional conditions and potential (for example, the age structure of the population). In areas where the demand and potential are very low, new solutions (for example, mobile services for the elderly) must be developed in order to ensure basic provision.

The Advisory Council addressed these challenges in an expert hearing open to the public. The results were summarised in a report (Parliamentary paper 16/4900). This report contains concrete recommendations on action for the Federal Government in the areas of urban and regional development, mobility and technical infrastructure (pipeline infrastructure). The Advisory Council demands, among other things, increased scrutiny of planned public infrastructure investments with respect to their future utilisation and, especially in the context of funding for urban development, support for inter-municipal cooperation and regional development concepts. Regional development plans should take priority over municipal plans. The Advisory Council further recommends, amongst other things, checking whether and to what extent the offerings of general public services and local public transport can be provided more flexibly, and in the area of the supply of services and waste disposal (energy, water, etc.) whether decentralised systems can be used. In addition, in the interests of sustainable development the Advisory Council advocates the increased use of low emission power devices and fuels, and the further improvement of accessibility in public transport. In the opinion of the Advisory Council, cooperation across departments is essential for achieving these goals.

The report was formally accepted by the German Bundestag in December 2007 with the adoption of a cross-party resolution. Under this, the Federal Ministry of Transport, Building and Urban Affairs which was in charge of its coordination was requested to implement the recommendations and report on them, and together with the *Länder* to compile a draft framework of actions for dealing with the consequences of demographic development in terms of the expansion and reconstruction of the technical and social infrastructure. In this context the Advisory Council welcomes the model project which has been initiated in the meantime, and anticipates concrete proposals for appropriate measures to meet the challenges of demographic change in the field of social and technical infrastructure, especially in rural areas.

III. The Federal Government's National Strategy for Sustainable Development

1. Parliamentary support for the Progress Report and Indicator Report 2006

One of the tasks of the Advisory Council is supporting the work of the Federal Government on updating the National Strategy for Sustainable Development.

One of the first activities of the Advisory Council during the 15th legislative period was therefore an inter-party response to the 2004 Progress Report, which was unanimously approved by the environment committee in charge and was adopted by the German Bundestag in its session on 2nd June 2005 (Parliamentary paper 15/5399). The substance of the response was an appraisal of the progress achieved and targeted criticism of the interim results of the Strategy for Sustainable Development.

Contrary to its original intention of presenting the Progress Report itself every two years, in 2006 the Federal Government commissioned the Federal Statistical Office to prepare the 2006 Indicator Report 'Sustainable Development in Germany'. It is a fact to be welcomed that for the first time the evaluation of the goals of the National Strategy for Sustainable Development was placed under the responsibility of the Federal Statistical Office, as the report of the Federal Statistical Office is an objective presentation of figures and developments without any political evaluation. Many of the indicators are developing in the right direction, however for some of them it is apparent that goals which have been set will not be achieved. In conclusion the Indicator Report shows that to date it has not yet been possible to establish sustainability as the central thread running through everyday decisions in politics, business and society.

2. Expectations of sustainability policy in the coming years

The Advisory Council welcomes the indicator system which has been introduced into the National Strategy for Sustainable Development as this instrument makes policy verifiable and measurable, but it has put forward suggestions as to how the indicators should be further developed and given concrete shape.

Moreover, the Advisory Council calls for the national goals to be more intensively networked with the goals of the EU Sustainable Development Strategy and international obligations.

For the future, over and above the above mentioned points (sustainability impact assessment, the management system and demographics and infrastructure), the Advisory Council recommends that the Federal Government take greater account of the following fields of activity:

Education for sustainable development

The measures in the context of the World Decade 'Education for Sustainable Development' 2005 to 2014, such as the 'Transfer 21' programme of the Commission of the Federal Government and the *Länder*, have not yet been sufficiently well received by society. Following the reform of Federalism, the *Länder* must embrace this subject more seriously. They must ensure that it is anchored on a cross-sectional basis in school, professional and university education, and linked to more intense public relations activities. The creation of organisational competence must be supported. This means being able to recognise non-sustainable development and learning how to apply knowledge about sustainable development. In this context the creation of a programme of education for sustainable development should take account of demographic development, intergeneration equity and the shortcoming that education for sustainable development still takes place primarily only in secondary schools.

Above all, sustainable development is a learning process, and for this reason education for sustainable development takes on central importance: through the positive imprinting of life styles and through each and every individual's awareness of their responsibility for future generations.

Research and innovation

Too little light has been shed on the subject of research in the National Strategy for Sustainable Development . In respect of the professional perspectives of future generations too research for sustainable development is also a fundamental building block for Germany as a knowledge society. It is a question of safeguarding opportunities and competitiveness in a globalised world. Amongst other things the Advisory Council calls for more intensive research into sustainable energy sources and power plants, an increase in resource productivity and the use of renewable raw materials in place of fossil and finite raw materials.

Prevention

Demographic change and an ageing society require more intensive investments in prevention. It is important to develop the skills of patients, to perceive health promotion as a task facing the whole of society and to establish effective early detection measures nationally. Moreover, prevention in the workplace can contribute to preventing disease, increasing satisfaction with both work and life, and precluding premature retirement. This also includes structuring working processes and procedures according to the age of the workforce.

Finances/Budget

Both the level of public debt and the neglect of necessary investments are mortgages on future generations. Necessary public investments must not be overlooked. At the same time the long-term benefits of investments must be weighed against their costs today and in the future in order to prevent an unnecessary burden on coming generations. After decades of increased debt, the Advisory Council considers it necessary, in addition to a balanced federal budget, to generate a budget surplus in the context of the economic cycle and use it for amortisation payments in order to regain political scope for creativity for present and future generations. This must be implemented via a systematic strategy of debt write-off.

Biodiversity

Biodiversity is currently dwindling worldwide at a speed which has never been seen before. On the one hand, the loss of genetic variety, the diversity of species and entire ecosystems means a loss of value per se, but this also has substantial negative economic and social consequences extending to great poverty and even existential destitution among the people affected. The national and international measures which have been adopted up to now to counter the loss of biological diversity are insufficient.

An important contribution to reducing the extinction of species is an interconnected network of nature sanctuaries, for which sufficient funding is necessary.

But the protection of nature everywhere else should not be neglected in return. The sealing of land, industrial agriculture and growing traffic volumes are the central challenges in respect of protecting biological diversity in Germany. An effective strategy for combating land use has however been lacking up to the present.

With the Federalism Reform I the Federal Government has also been entrusted with the task of complete regulation at the federal level. The Federal Government must implement this task fully. The opportunities for discrepancies in nature protection mean that responsibility is shifted to the *Länder*, and that both renewed efforts and a high degree of coordination will be required from the *Länder*, as otherwise legal uncertainty and a further fragmentation of environmental legislation are to be feared.

However, the protection of biodiversity is not the responsibility of the State alone, but is also an issue for society as a whole, which requires efforts on the part of industry, agriculture, forestry and every individual citizen.

Dealing with scarce resources

Absolute consumption of non-renewable resources is continuing to increase in almost all sectors despite the wide variety of efforts being made to conserve materials.

For sustainable development which protects the interests of the coming generations, the use of resources all round must be drastically reduced and the efforts made up to now in this area massively renewed. In the necessary replacement of these by renewable resources, as well as efficiency, the focus must also be more on long-term availability and on the environmental and social compatibility of extraction, processing and using resources, as the current discussion about biofuels demonstrates.

In a national resource strategy, increased efficiency and strategies on avoidance, reducing consumption and reuse must be supported through appropriate incentive systems. The waste policy in existence up to now must become a true resource handling policy. Resource efficiency and resource conservation play a pre-eminent role above all in reducing production costs, but in the last few years the prices of important raw materials such as metals have all but exploded.

IV. Conclusion

The work in the Parliamentary Advisory Council for Sustainable Development makes clear that there is no alternative to a policy of sustainability. There is cross-party acknowledgement of sustainability as a goal of political action. In everyday political activities the principle of sustainable development must not be disregarded because of short-term considerations. Irrespective of election campaigns we are dealing with a long-term and unavoidable permanent task. The joint goal of implementing the monitoring of sustainability within the legislative process makes this clear.

In the future through their work in the parties, expert committees and plenary debates in the German Bundestag the members of the Advisory Council want to contribute to anchoring the guiding principle of sustainable development more firmly in the parliamentary process. The Advisory Council will also continue to support the activities of the Federal Government constructively and critically, and within its sphere of influence will campaign for greater account to be taken of sustainability in political practice.

Sustainability as an overall task requires increased cooperation between the federal level, *Länder* and municipalities. The Advisory Council wants to contribute to this.

Sustainability as a Social Process —Contribution of the German Council for Sustainable Development—

Erfurt, 3rd July 2008

A proposal

Why do we get involved?

We have been appointed to advise the German Chancellor, make proposals, and introduce ideas pertaining to sustainability into public discourse. We are committed to this endeavour as matters of personal responsibility, professional competence, and political background—for the benefit of our grandchildren and the future of our society insofar as our actions today can help shape this future. We are concerned about the direction in which our society is currently evolving. We are facing massive climate change, a crisis in raw materials, and a fragmentation of our society, to name just a few challenges ahead of us. Meanwhile, the obvious opportunities offered by these changing times are not yet being sufficiently utilised to benefit our economy, politics, and society.

It is evident:

- that crop yields can not be increased fast enough to be able to sufficiently feed the growing world cities' population in the future, in light of the shrinking amount of agricultural land and the increasing competition for land used for other purposes;
- that depletable fuels can not be replaced quickly enough by renewable energy sources to satisfy the global explosion of demand. The manner in which we introduce transitional technologies into the market is not yet solidly determined. In the meantime, the actual global emissions of greenhouse gases exceed all of the estimates used for climate change forecasts;
- that prices of raw materials are increasing in the global markets, whether for fertilisers, staple foods, or copper, lead, and steel. In addition to many homemade individual factors, financial speculation, and, above all, the transition of large economies from command economies and economies of scarcity, this increase in prices will in many ways affect the opportunities to solve global problems;
- that times where sustainable financial investments did not produce attractive rates of return are long past, but that still massive amounts of capital are invested in financial markets that have no future. It is a misconception to assume that fossil fuels are cheaper than renewable energies. This assumption is only true if the costs of a non-sustainable use of resources are ignored in price calculations;
- that our educational policy is far from creating equal opportunities for everyone while a) the large potentials for a preschool education remain unexploited, and b) Germany's large deficits in tertiary education are unacceptable for an industrialised nation.

If these facts prove to be correct, our present times hallmark some historic events. The melting of the polar ice caps, hunger revolts, migrations of whole populations, and the fight for increasingly scarce land and water, the economy of peak-oil with prices for resources that threaten to exclude whole economies from the market—indicate that time is running out. Successes in Germany, such as preserving the purity of rivers, recycling, biofood products, and the increase in renewable energies, are all well and good. But, they are insufficient.

It is, therefore, not exaggerated to sound the alarm bell. Who does not hope that there is still enough time to set a new course of action so the negative predictions won't become our reality? If we manage to avert the potential crises, the alarm bells, then, will have fulfilled their function, for no one enjoys doom and destruction.

Active responsibility...

...begins by clearly stating where we stand. Our children and their children will be asking us with some amount of righteousness: 'Didn't you see all of this coming? Didn't you know about the warming of the earth? Couldn't you tell how the power over less oil, gas, and important raw materials was going to affect us all?'

What is of no help is to have a fatalistic feeling of guilt while still continuing to tread the old path at the same speed. Furthermore, avowing one's own helplessness or tackling small projects for the good of one's own conscience are not what is needed. We believe that we must bring more courage and strength if we are to change things that appear to be chiselled in stone and overcome resistance to such change, even if this means that we have to give up some of the things that we got used to.

We are not starting from scratch.

On the contrary, much has already been achieved. Sometimes, it is difficult to assess what is actually new given the vast amount of fashions, trends, latest crazes, and other information that comes and goes.

Many of those who fight for the same causes as we do are already philosophising—in part sceptically, in part somewhat timidly, as to whether the term 'sustainability' is too unwieldy or is lacking in power. It is, of course, justifiable to question the meaning behind certain terms. This is especially true since the term 'sustainability' on occasion is used without any discernible meaning. The question, however, on whether or not the term 'sustainability' represents somehow a linguistic impediment in the German language may easily be left aside. In any event there is no more appropriate expression, and it is useful as it is. The word 'sustainability' is far-reaching. Whoever uses it will need to explain exactly what sustainability means, where boundaries in the use of nature and in the social contract are to be respected, and which limits of thinking must be shifted. These issues are worth debating.

And, can we not be proud that the term 'sustainability' in Germany has led to a new course of action in forestry? It is important to remember this, despite all the critical developments in the history of forest management since then. Can this experience not give us courage and strength to debate the meaning of this term over and over again and to fill it with new life? Sustainability could mean to avert the threat to the climate. It could mean to force our ageing society to develop innovative ideas or to help us to pay heed to the future.

Sustainability does not come for free. It is exhausting to fight for sustainable development. The Federal Government makes its goals for sustainability measurable and rightly so. In so doing, it provides information on its future direction. We have assessed goals and their indicators—on the basis of data from the Federal Government—using red, yellow, or green traffic lights. Everybody ought to know where we stand.

In September of 2007, the German Council for Sustainable Development raised the bar high. For the Federal Government's Progress Report, the Council demanded higher accountability in the management of sustainability from the Federal Government. The Council hopes that this may lead to a more effective strategy. That it is necessary to increase the efficiency of the Strategy for Sustainable Developmentis proven by the 'Traffic-light Report' that evaluates the progress on the goals set by the Strategy for Sustainable Development in 2006. Now, the Federal Government accounts for the progress achieved to date and is proposing new measures for increasing the effectiveness of the Strategy for Sustainable Development.

Most traffic lights are red or yellow...

...this is reason for concern. Sustainability requires vision but, at the end of the day, more concrete results need to be clearly visible and take effect. This is only possible if the goals are binding and if measurement, whether the traffic light is red, yellow, or green, is improved. Anyone who is always stopped at red lights must ask himself whether he is on the right track. It would be wrong if failure to reach a goal would not lead one to think about the reason for such failure and about what alternative measures could lead to success. Moreover, it would also be wrong to simply give up on a goal, to slink off in defeat, or to set an even higher goal in defiance without considering modifications.

Science and education are the most important long-term levers in this process. Sustainable development policy is innovation policy, with the term 'innovation' covering both technical as well as social innovation. Committed people in all areas of life—schools, job training, everyday work, universities—already demonstrate that actively facing the challenges presented by sustainable development globally and locally, helps to unite things that are frequently drifting apart nowadays or are even getting lost: knowledge and enthusiasm, information and curiosity, research and success, as well as teaching and satisfaction. A more effective Strategy of Sustainable Development must foster research and teaching on all levels in order to bear fruit for the future.

The red lights, however, also point to the imperfect coordination of activities at the federal, regional, and municipal levels. To that regard, we also note a need for improvement in the coordination among the State, businesses, civil society and the media. There is a lack of courage in adopting new processes for the management of goals. Whoever takes sustainability seriously must move the goal posts to allow for political practicality. Without important policy changes, many goals are simply not achievable. The traffic light balance is an important measuring stick for future work related to the Strategy of Sustainable Development. The balance mandates that the Strategy must be set in the focus of policy in order to make more rapid progress on the path towards sustainable development.

If short-term measures are confused with what is important,...

...this is the wrong course for a long-term sustainable future. The traffic lights also call attention to this fact. In politics, the time available to turn an idea into action is somehow always short. This leads to the political phenomenon where the measures with time limits and introduced at short notice always take priority. The time constraints of everyday life turn everything that seems to be urgent into something that is perceived to be urgent without being questioned. Yet, this is not necessarily always the case. The more long-term goals can, of course, be more important and, in fact, have more significance, predetermine other things, distort and exclude alternatives. Whoever confuses issues limited in time with issues of great importance will not realise the value inherent in the issues that are relevant for the long term. Such an observer will tend to misperceive sustainability policies as a mere blip on life's radar screen.

Long-term, comprehensive perspectives for sustainable development require their own platform for their necessary powerful and forward-looking debate. The more long-term the consequences of non-sustainable trends are, the more complex the field of the stakeholders becomes. The more values and lifestyles are at the centre of attention, the more important it is for the sustainable goals that the commitments and the management tasks of the State, businesses, and society are made clear, conflicts in goals laid open, and more expansive learning made possible. This is what we expect from an effective strategy for sustainable development.

Positive signals...

...from business and society: sustainability is now being received in the world of business and in the competitive environment in a different manner from that of even a few years ago. It is about time. Themes related closely to the field of business have always played an important role in the thinking about the ways of achieving sustainable development. While in the 1980s and 1990s it was mainly about politics and the State, now responsible businesses are catching up. Could they even become the driving force?

Beyond governmental action, society is sending signals for many examples of constructive and creative adoption of the idea of sustainability. Artists are assimilating the challenges of sustainability in an exemplary fashion. On the Internet, social networks have sprung up among people who are committed to strategic consumption, in keeping with the guidelines of sustainability. Students are initiating new forms of sustainability discussions at their universities. In urban planning and real estate, 'sustainability and building' is being expanded upon with new concepts, such as labelling of buildings and the theory of total cost of ownership of real estate, to name two examples. This all provides grounds for optimism about the future. Yet, these same concepts draw a clear picture of what is still woefully lacking.

What sustainability means in concrete terms...

...is a question still far too little answered by means of comprehensible information, support, and certificates or labels. In its origin in forestry, sustainability means that one should not cut trees beyond the regeneration capacity of the forest. However, when this idea is transferred to economic activity and consumption in a world that, in a few decades, will have a world population of nine billion people, the matter is not so simple and must be interpreted in a variety of ways. Laypersons (i.e. all of us dealing with issues beyond our own field of expertise) require clear guidelines about products, services, and business for their own behaviour and in terms of politics.

- In order to decide about sustainable products when shopping in everyday life, we need a larger amount of more detailed information.

- In order to tailor political decisions on laws and statutes to the Strategy for Sustainable Development, we need a sustainability check. An assessment of the impacts of laws and regulations on sustainable development at an early stage in the legislative process will not be able to provide final solutions to all questions, but it can make a significant contribution to saving a lot of trouble.

- In order to make wiser decisions as to what sustainable consumption evolves, where and how living accommodations are built, how mobility is maintained and unnecessary transport avoided, how economic activity is to be decoupled from the use of resources, and how we take advantage of the environment without destroying it, we need more research and education on sustainability. We need to forge a path towards a culture of research for sustainability, as did Wilhelm von Humboldt in his time by the revolutionary philosophy of uniting research and teaching.

- In order to actually turn the many good suggestions and innovations into reality, we clearly need more and more forward-looking initiatives for continued education and professional training. For all fields where one thinks practically and works manually, the task will be to turn sustainable solutions into real applications.

The 100 youngest parliamentarians...

...from German cities and municipalities assembled at a conference for the first time in June of 2008. The policy of sustainability requires this new kind of consultation and discussion, which is not simply new with regard to its form, but also to its contents.

For three days, the participants developed political conclusions based on constantly changing assignments and formats. At the beginning, all presented concrete examples from their daily political lives which formed the basis of discussion. In groups, they then discussed relevant threats and opportunities. These groups were followed by hot-seat debates, the formulation of demands, preliminary presentations, discussion rounds, feedback rounds, and finally input from members of the German Council for Sustainable Development and other political experts. Agreement and disagreement to the proposed solutions was determined at the conclusion of the conference by a TED survey. The most important outcome of this conference was: it was clear from the political action and the concepts developed by the conference participants that the major political challenge was to develop a future-oriented policy based on intergenerational equity, one that is both environmentally friendly as well as competitive. For the young politicians, sustainability has a clear profile.

There was an obvious signal, for example, for a reassessment of the economic dimension of sustainability. The predominant opinion was that the evaluation of the profitability of projects must also rigorously take into consideration the long-term changes of the framework conditions, total costs of ownership of products and buildings, an adequate cost-benefit ratio, and the aspect of equity and fairness. A transparent and more reliable planning of expenditures was also called for. In this context, demand was expressed that municipal politicians be informed in detail about new possibilities of budget management and control of public administration.

The Federal Government is requested to seek an exchange with the municipalities and to launch an information network with administrative departments on all policy levels in order to improve communication about sustainability policy. Volunteer benefit cards, cooperation with neighbours, the introduction of a sustainability check, the support of exchange and cooperation between the generations, the commitment to immigration into Germany, the support of volunteer work—these are only some of the additional results of the discussions.

Sustainability must be filled with life...

...at local level. There are enough high-reaching goals and concepts (for now). What we are lacking are the concrete procedures and processes to implement and administer them, to make them binding, and to ensure that social responsibility leads to personal expertise. This is another result of the conference of the 100 youngest parliamentarians from the municipalities. The participants also made it clear, however, that there already are a number of good examples in place in politics. The overall view of matters should not deteriorate into the clichés of a Sunday sermon. Sustainability must finally become a category of action for all seven days of the week. Politics must, in the process, also be reinvented in certain areas, for otherwise, the idea of sustainability will remain lip service.

Sustainability must be practiced at a local level. Meanwhile, experiences made at the local level must be taken onboard in national politics more strongly than they have been to date. We, the Council for Sustainable Development, do meet not only in Berlin, but also regularly in the local communities, most recently in Erfurt. Conversations with the stakeholders from businesses, the schools, other educational institutions, environmental groups, and political representatives of the city and the Land confirm our belief as to the importance of concrete strategies for implementation.

The culture of recognition...

...is all too often, a carelessly neglected resource. Good examples of sustainability initiatives exist in the business world in both large and small companies. There are also examples to be found in many places on the local level. With the award within the framework of the action *Bürger initiieren Nachhaltigkeit* ('Citizens initiate Sustainability'), the Federal Government in 2005/2006 took its first step in the right direction. The success of ideas and initiatives often depends more upon recognition than upon funding alone. Sustainability policy here needs to do a lot of catching up. We should in the future place much more emphasis on the competition of ideas.

We should also give more recognition to our European neighbours, almost all of whom are breaking new ground in their own strategies for sustainable development or are in the process of developing such. The political culture in Europe is so differentiated that concrete steps towards strategies for sustainable development comprise a large pool of various ideas and concepts. History shows many examples of a European identity emerging through the exchange of goods and ideas. The conference 'European Sustainability Berlin 2007', which was a contribution of the German Council for Sustainable Development to the German EU Presidency on behalf of the Federal Government, advanced the exchange of opinion and ideas on this concept.

Year after year and always starting out new...

...we communicate the idea of sustainability in projects for the young. Whether with pupils from the *Hauptschule* ('secondary modern school') in dancing projects, in literary competitions or with action days, fashion shows, idea competitions, or movie spots on sustainability: the 'Mission Sustainability' works.

Our projects demonstrate what can be done. They show that it is possible to communicate the idea of sustainability to people that do not necessarily live within the charmed circle of experts. Creativity and process thinking are important. What is decisive is that we make the concept of sustainability an issue of lifestyle, integral to our meaning of life and our culture.

It is the capacity of the German Council for Sustainable Development to demonstrate, on the basis of numerous examples, what communication can accomplish for sustainability. What in a microcosm can be demonstrated must, at the same time, now finally be expanded into the big picture view, and, hence, picked up for example by foundations, businesses, and institutions.

We have achieved effects...

...chiefly in three subjects pertaining to the policy of sustainability. They have in common that they do not follow the classical political scheme that defines who is responsible for a problem and then solves that problem by means of passing a law or some kind of support measure. Our current issues and their effects are more complex and affect the whole of society.

As early as 2003, we posed the question regarding the sustainable energy mix and the role of coal as a source of energy. We demanded that the 'sleeping giant' of energy efficiency be roused, as he was still fast asleep and demanded more money for energy research at times when the budget figures pointed downwards. We directed our recommendation for corporate social responsibility (CSR) at businesses and the Federal Government, in order to lift the barrier between voluntary action and legal requirements. Our proposal to limit the amount of land used for new construction of roads and living areas to 30 hectares per day (instead of the common average of over 100 hectares per day) and to accomplish this by 2020 was regarded by many experts with scepticism, even though it is realistic. Nobody doubts, however, that this would be desirable and that it could introduce a high degree of innovation into a society experiencing demographic transition. We managed to increase awareness as to the topic of land use. However, we have not been able yet to actually reduce land use.

We have made an impact across all hierarchies and interest groups through intervention and dialogue. With forums, debates, and proposals, we have stimulated actions, whether they be research and dialogue programmes, entrepreneurial actions, policy decisions, or 'agenda setting' at the regional and municipal levels. In order to have a long-lasting and positive impact on society, it is necessary to question boundaries and borderlines and to ensure that old problems are looked at in a new light. The practical resonance from sustainability thinking in society is more positive than the traffic light balance of the goals of the Strategy to Sustainable Development gives reason to believe. Since we are still far from a real sustainable development, however, we take up these topics once more.

In view of the challenges of the global markets...

...we now notice a different trend of CSR towards sustainability. Progressive companies develop their own stance and profile when it comes how they each face the challenges of the future with their own products and services. They make CSR an important part of reliable business relations and value chains. Medium-sized enterprises, as innovators and suppliers active in international markets, need to be increasingly prepared to provide information on their processes of production. Thus, more informed standards for a good sustainability management can emerge. Transparency plays an important role in this process. Exemplary businesses (there are still not enough of them) have, in the recent past, issued sustainability and CSR reports and started to set this trend. A competition for the best solution has emerged, which the German Council for Sustainable Development promotes. Among other things, we support the ranking of sustainability reports

performed by the *Institut für ökologisches Wirtschaften* and *Future e. V.* ('Institute for Ecological Economy Research and Future'). The institutes compare the sustainability performance of the top 150 companies in Germany. Politically, the issues are to further stimulate corporate social responsibility and to secure the reliability of information provided by companies. Also at issue is to judge the State by its own responsibility, in particular with regard to public procurement.

Whoever enters into a dialogue...

...is no longer independent of other dialogue partners. There is no answer independent of the question as sustainability concerns and affects us all. The connection between the German Council for Sustainable Development and the highest level of the Federal Government is an indicator of political attention, but also of the quality of the Council's advice.

The debate on sustainability is only possible through involvement, and not through any finger-pointing reproach. Our Council has weight only when we first make our own responsibility clear. Every individual must start with himself based on this principle. In practice, this currently means that the State has to reform public procurement.

We would like to contribute to the rearranging of antiquated thinking patterns and the shifting of boundaries in order to open up new options. The idea of sustainability has not yet reached the point where it should be: as a compass for directing politics and business. In everyday life, it often fades to the background, where it seems an administrative compulsory exercise. Sustainability would be superfluous if it were shifted to a political side track.

We recommend...

...that the Federal Government use its contribution to the World Exposition 2010 in Shanghai as an opportunity to introduce to the international public the German Strategy for Sustainable Development. We think it is important to make the presentation at the German pavilion a platform for discussing national and global ways to achieve sustainable development. We believe that the National Strategy for Sustainable Development offers good starting points for such a debate.

Germany's technological knowledge and the manner in which society turns sustainability into a guiding principle for lifestyle, meaning of life, and culture are good starting points. The new approaches to sustainable construction along with how to shape demographic change in Germany are perceived with interest by the international community. In view of the developmental dynamics of the host country of the World Exposition, an explicit profile of Germany with regard to sustainable developments would be a good topic for discussion.

In order to prepare this presentation, we recommend that a conference of the Federal Government, the *Länder*, and the municipalities on the perspectives of sustainable development be held. It should formulate the basic political principles of a joint responsibility for sustainability, with different levels of responsibility for its practical implementation in differing areas of jurisdiction; it should also clearly improve the accountability of the National Strategy for Sustainable Development as well as increase its influence.

We regard it as indispensable to strengthen the accountability of the Strategy for Sustainable Development and to orient public investments and procurement to the Strategy in a verifiable manner.

G

Sustainability in the *Länder* —Contribution of the *Länder*—

Conference of the Minister-Presidents of the *Länder* of the Federal Republic of Germany
Berlin, 12th June 2008

Sustainable development is a social and political process at all levels. Strategies and concepts for the promotion of sustainable development are available on the level of the United Nations, the European Union, and at national, regional, and municipal levels. These initiatives should not be isolated from one another other, but should instead be connected in order to take advantage of synergy effects.

For this reason, the *Länder* very much welcome the invitation of the Federal Government to make a joint contribution to the Progress Report on the National Strategy for Sustainable Development. In the opinion of the *Länder*, this could be the beginning of a long-term, closer cooperation in the field of sustainability strategies. The *Länder* consider an in-depth exchange on the main issues of sustainable development and structural questions posed by sustainable development strategies to be necessary. As such, they offer the Federal Government their cooperation.

In order to make a significant contribution to the Federal Government's Strategy for Sustainable Development on a broad basis, the *Länder* should in principle be included as early on as the design phase in keeping with their role in the federal system. In the view of the *Länder*, this would make it possible to link the contents of strategies in a more pronounced manner and to increase the effectiveness of sustainability strategies and related processes at the national and regional levels. The *Länder* offer a constructive dialogue in this context.

Sustainable development cannot be mandated from the top, but rather must evolve from a dialogue among the respective stakeholders and with the participation of the appropriate groups of society. Precisely here is where the *Länder* and the municipalities play an important role because of their proximity to the citizens as well as to business and other areas of society. In an intensified cooperation between the Federal Government, the *Länder*, and the municipalities, as well as stakeholders from business and civil society, the *Länder* see an opportunity to use the additional synergetic effects for the benefit of the process of sustainable development in Germany.

I. Variety of policy approaches and experiences with strategies for sustainable development in the *Länder*

The *Länder* are committed to sustainability as a goal for their development. Correspondingly, various structures have been created in the *Länder* to adequately discuss and implement the topics relevant for the future.

Different prerequisites, experiences, and challenges are good reasons for the *Länder* to adopt different strategies on the path towards sustainable development. Some *Länder* have decided to adopt an overall strategic approach, while others discuss sustainability in a theme- and project-oriented fashion.

Some *Länder* have introduced dialogue and consultation processes for the formulation of joint objectives for sustainable development. Other *Länder* have initiated region-wide agenda processes. Several *Länder* have started their own comprehensive strategies for sustainable development. In the area of sustainable management, the existing environmental partnerships at the level of the *Länder* are an example of the way cooperation organisation between governmental and non-governmental organisations with regard to the promotion of principles of sustainable development can be organised.

The range of topics addressed is broad, and many priorities of the individual *Länder* as well as priorities of the *Länder* and the Federal Government match. The subjects range from energy and climate protection, demographic change, mobility, work and the economy, and the development of cities and regions up to education and research.

Experience of the *Länder* with initiatives on various levels for the support of sustainable development, has shown that the following approaches have proved valuable:

The integration of stakeholders from society

Sustainable development as a participatory process is not simply a matter of politics and public administration alone, but should also be supported by the active participation of social groups. From the perspective of the *Länder*, it is helpful to assign an active role to social stakeholders and to include them directly in the process of strategy development.

Development of clear objectives

In order to conceive the guiding principle of sustainability in more concrete terms, many *Länder* have formulated clear goals. These serve as a long-term orientation framework for all players, making planning more reliable and offering practical orientation. With the aid of appropriate indicators formulated based on agreed-upon goals, the progress towards the achievement of such goals can be monitored.

The *Länder* offer to share their experiences in discussions with the Federal Government and would welcome it if this could take place during the early phases of any goal development. This applies especially to the subject areas in which the *Länder* play an important part in implementation.

Concrete implementation of sustainable development

Sustainability as an abstract concept is an idea lacking vigour. Furthermore, sustainability strategies should not rank higher than any other policy area or social area. This would severely limit the freedom of action on the part of the players and would ask too much of any strategy for sustainable development. For this reason, the *Länder* have defined subject areas and/or fields of action. Within these fields, sustainability will be filled with life through concrete actions, projects, and initiatives. In this way, sustainability becomes more definitive as well as tangible for the general public.

The successful implementation of a central topic of sustainability in the *Länder* should be illustrated by the following example of education for sustainable development.

Education for sustainable development

Education is one of the keys to filling the guiding principle of sustainability with life and to broadly embed it as a lived-by, adhered-to principle for action.

Because of the vertical separation of powers between the Federal Government and the *Länder*—also strengthened as a result of the Federalism reform in the summer of 2006—the responsibility for educational

policy particularly lies with the *Länder*. The involvement of the *Länder* in the area of education for sustainable development is diverse, as is usual in a federal system. They have developed concrete measures and programmes relating to this issue. In doing so, the *Länder* make important contributions, especially in the support of the United Nations Decade of Education for Sustainable Development.

With the United Nations Decade of Education for Sustainable Development from 2005 to 2014, the United Nations emphasised the global significance of sustainability-related education and created the framework for its support and intensification. The governments were called upon to include measures for supporting the UN Decade of Education for Sustainable Development in their educational strategies and action plans.

A National Committee was set up to oversee the coordination of the Decade's activities throughout Germany. The approximately thirty members cover a broad spectrum of the educational landscape for sustainable development in Germany. The *Länder* are represented in the National Committee and the Round Table by their ministries for the environment or for culture and are actively involved in the discussions.

Furthermore, the *Länder* are active in the framework of updating the 'National Plan of Action for Germany' and contributed to this year's nationwide action week of the German UNESCO Commission, from the 19th to 28th September, 2008, with a variety of events.

Through the educational measures at the regional and local levels, the 'National Plan of Action for Germany' gains substance and the process of sustainability has the necessary broad effects. The regional and local projects in support of the UN Decade (Decade projects) were awarded a prize for their model character in making an important contribution. The activities of the *Länder* and municipalities in the context of the UN Decade are thus an important pillar of the nationwide sustainability activities.

The high-profile United Nations Decade of Education for Sustainable Development is well-embedded in the German political landscape. It provides valuable support in the revision of existing educational approaches not only in schools, but also in all the other educational areas. The contributions of the *Länder* to the UN Decade deal with the following topics of sustainable development: energy and climate protection, biodiversity and habitats, water and soil, consumption and lifestyle, intergenerational cohesion, mobility, building and living, health, nutrition, the fight against poverty, quality of life, human rights and democracy, and international cooperation as well as migration and cultural diversity.

The exchange of experience and the cooperation among the *Länder* especially take place via the Conference of Environment Ministers and the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder*. The *Länder* regard it as necessary to also expand the cooperation to other levels.

The *Länder* suggest assessing whether the structural measures within the framework of the UN Decade of Education for Sustainable Development provide ideas for an intensified horizontal and vertical networking in other subject areas of the National Strategy for Sustainable Development.

II. Development of indicators of sustainability

To achieve sustainable development is a long-term process, during the course of which the results of programmes, projects, and measures often are effective and recognisable only in the long run. Hence, an important ingredient of such a policy is a scientifically-founded monitoring of whether such measures take hold and lead to the desired goal. Here, the indicators serve as instruments in the strategic monitoring.

The *Länder* have already accomplished yeoman's service in this area at a very early stage. It started with the indicators for the municipal level. Different projects across the borders of individual *Länder* resulted in a generally recognised set of municipal sustainability indicators ('LINK 21'). This was followed by indicators for the *Länder* themselves. They jointly developed a set of 24 environmentally related sustainability indicators currently applied, that is supported by all the *Länder*. It was adopted by the Conference of Environment Ministers of the *Länder* in 2003. The first Indicator Report was published in 2005 and updated in 2007. These reports illustrate the developments and trends in the area of the environment.

The goal must be, however, to be able to provide information and make forecasts on all issues relevant for sustainable development separately for each Land. The inclusion of the issues of business and social affairs in addition to the topic of the environment not only completes the picture, but also makes it possible to consider mutually influencing developments in an assessment of the overall situation.

In the development of a coordinated set of socio-economic indicators, the *Länder* expect—as has already happened with environmental indicators—commitment and support on the part of the Federal Government and the government authorities. At the same time, it must be considered that, in many cases, the bases for the data and the survey and calculation methods for the *Länder* differ from those of the Federal Government. An often-desired comparability of the development or the progress is largely neither vertically—from the Federal Government through the *Länder* all the way to the municipalities—nor horizontally possible among the *Länder*.

The *Länder* place great importance on the fact that—as shown in the area of the environment—no additional effort for the collection of the necessary data is required. If the *Länder* agree on a common procedure, existing statistical data can be used and an informational added-value factor can be achieved.

III. Focal points of the National Strategy of Sustainable Development

Contrary to the 2004 Progress Report, the Federal Government resolved to present the topic of sustainability in more detail based on three focal points in the Progress Report 2008. It will develop both the content and concept of its Strategy for Sustainable Development further in these three fields, namely climate and efficiency, sustainable raw materials industry, and demographic change. The progress in other policy fields of sustainability are treated in more condensed form compared to the focal points in the Progress Report 2008. The Länder assume that the previous topics of the National Strategy for Sustainable Development, such as the reduction of land use, conservation of biodiversity, and education for sustainable development, will be further intensively pursued by the Federal Government.

The *Länder* will continue their involvement within the framework of their competencies in working on the following topics of the National Strategy for Sustainable Development in order to support the overall process.

Focal point ‘Climate protection’

The *Länder* make a comprehensive contribution to the definition and implementation of the measures proposed by the Federal Government in its Integrated Energy and Climate Programme adopted in Meseberg in August 2007. The *Bund-Länder-Arbeitsgemeinschaft Klima, Energie, Mobilität – Nachhaltigkeit (BLAG KliNa)* (‘Working Group of the German Government and the *Länder* on Climate, Energy, Mobility—Sustainability’) was tasked by the Conference of Environment Ministers of the *Länder* to see through the implementation of the national and European measures on the Integrated Climate and Energy Policy, especially to deal with the key elements contained in the programme adopted in Meseberg and to develop proposals from the point of view of the *Länder*. This applies primarily to the pillars of energy conservation, energy efficiency, and renewable energies including the pending measures for reducing emissions in transport. Moreover, a concept for the participation of the municipalities as well as additional proposals in the areas of integrated climate protection and energy law will be developed.

Focal point ‘Demographic change’

In order to be able to face the challenges of demographic change, it is necessary to develop new ideas. There is no standard recipe for success for coping with demographic change. What is required is to develop foresighted methods of resolution that are adapted to specific regional requirements. For this reason, the *Länder* regard the positioning of demographic change as a focal point of the Strategy for Sustainable Development as essential. They are greatly interested in intensifying the existing cooperation with the Federal Government and sharing their experiences in the course of developing and implementing concepts for the sustainable development of urban and rural areas.

Focal point 'Sustainable resource management'

Also in the context of the focal point 'Sustainable resource management', the *Länder* offer the Federal Government their cooperation. They have at their disposal a wide range of activities, such as environmental partnerships at the regional level, aiming at the promotion of resource conserving production and business methods, *Land* funding schemes in the area of in-company environmental protection, the support of in-company energy and material flow management, and funding focuses related to innovative and environmentally-friendly technologies.

Continuity of the focal points

From the viewpoint of the *Länder*, additional subjects besides those named in the Progress Report 2008 have special significance for a National Strategy for Sustainable Development and should be dealt with there. In addition to the subject of education for sustainable development already mentioned above, these are the reduction of the use of land for settlements and for transport and the conservation of biodiversity. Progress can only be made by continually addressing these issues.

With respect to the topic of reduction of the new use of land, the *Länder* have started a variety of activities that demonstrate how a sustainable policy of land use under the special considerations of ecological, social, and economic development opportunities can be organised. The experiences collected on the regional level relate to the various planning, legal, and fiscal instruments, an ecologically and economically viable policy of land budgeting, the municipal systems of land management, and the cooperation of urban regions and municipalities for the conservation of land and soil while simultaneously securing economic capacity. The *Länder* will continue their work to this regard and offer to add their experiences in this field to the considerations of the Federal Government.

In the view of the *Länder*, the protection of biodiversity, also defined as a guiding principle in the National Strategy for Sustainable Development, should due to the complexity of the task and the necessity of involving the widest range of stakeholders from politics, business, and society, likewise be treated as an important subject of the Federal Government's Strategy for Sustainable Development.

IV. Strengthening of vertical and horizontal coordination

Because of the federal structure of the Federal Republic of Germany, possibilities for regulation are limited both at the national level and at the level of the *Länder*. Especially in subject areas in which the *Länder* play a major role in implementation, the Federal Government depends upon cooperation with the *Länder* already when setting goals. The *Länder* are aware of this responsibility as well as the necessity of involving and integrating the municipalities as partners on an equal footing.

Moreover, because of their complexity, coping with many topics requires a approach concerted between the departments that makes use of various media. Against this background and in view of the global challenges, the *Länder* regard it as necessary to work towards a combining of strengths and a concentration upon common goals and tasks.

For this reason, the *Länder* argue for a stronger vertical (Federal Government-*Länder*) and horizontal coordination (among the *Länder* as well as the expert departments) of the strategies of sustainable development.

This means in particular:

- an intensification of the exchange of opinion and regular consultation at EU, national, and regional levels as to concrete goals and measures within the framework of the implementation of a jointly supported National Strategy for Sustainable Development;

- a stronger coordination of the goals and activities of the EU, the Federal Government, and the *Länder* in line with their competencies. The subsidiary principle must be taken into account insofar as the *Länder* choose, in each case, the specific form of implementation in a way that ensures the realisation of sustainable development under the aspects of integration, efficiency, and effectiveness. The *Länder* attach importance to the interests of the municipalities in equal measure;

- a determination of the basic direction in which the joint policy of sustainability is headed by the Conference of Minister-Presidents irrespective of the technical responsibility (especially with regard to environment, business, social affairs) or in order to make transparent and externally perceivable the joint political will of the persons responsible in the *Land* governments.

Sustainability at Municipal Level—Contribution of the Municipal Umbrella Organisations*)—

*) *Bundesvereinigung der Kommunalen Spitzenverbände* ('German Association of Municipal Umbrella Organisations'), consisting of the German Association of Cities, the German County Association, and the German Association of Towns and Municipalities

I. Sustainability as a central guiding principle of municipal politics

Sustainability is increasingly becoming a central guiding principle of municipal politics. As early as in the middle of the 1990s, German municipalities began to implement the action programme 'Agenda 21' of the United Nations Conference on Environment and Development, which took place in June of 1992 in Rio de Janeiro. Since then, the topic of sustainability has been gaining in importance above and beyond the area of ecology.

Sustainable action is not ecological action alone, but is also understood in the areas of social affairs and the economy as an important municipal guiding principle. If, for example, the conservation of resources or climate protection can be classified as traditional ecological areas that require sustainable action, then sustainable budgetary policy is a key element of future-oriented action from an economic point of view. From the perspective of the municipalities, in view of the future generations of our children and grandchildren, this requires to a great degree the permanent and fundamental balancing of the public budgets. Finally, sustainability also has a social component. Thus, for example, only through sustainable action in social and urban development policy can the increasing segregation of society be counterbalanced.

In what follows, two important aspects of municipal policy committed to the principles of sustainability will be discussed in detail, namely climate protection in the municipalities and the reduction of land use.

II. Climate protection and municipalities

Climate protection is one of the greatest challenges for the future and one of the core elements of a sustainably designed municipal policy. The cities and municipalities play a major role in this context.

At the international, European, national, and regional levels, the issue is to create the framework for effective and trend-setting climate protection. Municipalities are the level where practical implementation occurs. It is here that the technological, economic, and ecological challenges facing us are concentrated. In the municipalities, climate protection is a reality. In order to achieve this implementation, the commitment of all of stakeholders involved is needed, i.e. public administration, municipal politics, businesses, and individual citizens on the local scene. It is also necessary, however, for the Federal Government and the *Land* Governments to support this commitment in a targeted manner.

The municipal umbrella organisations support the goal of the Federal Government to reduce greenhouse gas emissions by 40% in the year 2020, as compared to 1990. Important sub-goals to this regard are: the increase of the share of renewable energies in the electricity sector to 30% and the co-generation of heat and power to 25% by 2020, the increase of the share of renewable energies in the area of heat to 14%, and the doubling of energy productivity by 2020 (as compared to 1990).

These ambitious plans can only be achieved with the active participation of the municipalities, since they occupy a key function as the public level closest to our citizens.

Cities and the municipalities are consumers of energy, to start with. They are the largest owners of buildings in Germany, with about 40,000 school buildings, 50,000 day care centres, and over 15,000 administrative buildings. In addition, they maintain motor vehicle fleets and purchase consumer goods and assets. Municipalities are, however, not just consumers; they also serve as role models for citizens and businesses. Thus, for examples, a climate-friendly renovation of a building, increased use of combined heat and power generation, or the use of solar power could serve as examples for citizens and entrepreneurs and stimulate them to follow suit. An increased function as a role model can also be achieved by municipalities by combining the awarding of contracts in individual cases with sustainable criteria that protect the climate, since municipalities are the largest public purchasers.

Moreover, the municipalities shape politics geared towards the principles of sustainability in particular within the framework of urban land use planning. Examples of this are: the arrangement and design of buildings, the support of passive houses, urban planning aimed at the guiding principle of a compact city, or transport development plans that promote bus, rail and bicycle traffic.

In addition, cities and municipalities, as well as their municipal businesses in the area of supply and disposal, can pursue an active climate protection policy. Thus, public welfare services, for example the supply of energy, short-distance public transport, residential construction, or sewage and waste disposal services, can be set up in a climate-friendly fashion. Here, certain services can be offered to the citizens. Yet, these still need to be made use of by the citizens. Incentives through fees and tariffs can be of help here to support sustainable economic practices.

Finally, municipalities are also active as counsellors and supporters in the implementation of a strategy for sustainable development. Examples include numerous municipal information centres on climate protection and energy efficiency, promoting the use of individual funding schemes in this field, participation in climate protection contests, and various educational initiatives in cooperation with the schools.

In line with the motto, ‘Think global, act local’, this demonstrates that an active climate protection policy in Germany and sustainable politics can only be promoted in cooperation with the cities, municipalities, and counties.

III. Sustainable urban development and reduction of land use

Two additional important components of sustainable development at the municipal level are an urban development designed for the long run and the reduction of the use of land. City planning and urban development have the duties of making active contributions to climate protection and to promoting adaptation to the consequences of climate change. Spatial planning and urban development serve, on the one hand, the purpose to protect, secure and further develop the spatial structure and its components (settlement, transport, and open spaces) in a sustainable fashion. On the other hand, we should protect and secure natural resources and plan and regulate the use of those resources. For this reason, a mixture of strategies is necessary if we are to have successful urban development and city planning that pursue strategies of both avoidance and adaptation and, where meaningful, combines them.

Within urban development and city planning, the municipal level exercises considerable room for manoeuvring and options for action. The municipal level plays an important role for the implementation of integrative and large-scale strategies for adaptation. Thus, for example, flood prevention, the maintenance of air flow corridors, and the development of fresh air and water storage can especially be managed successfully at the municipal and regional levels.

One of the large challenges is the reduction of land use. The goal of sustainable development should be to reduce the use of land for settlement and transport areas in Germany.

Through the use of land for settlement, business, leisure, and transport, land as a resource will be impaired. Cities and municipalities have, thus, recognised that the use of existing land in cities and municipalities will gain in importance in the future development of settlement areas within the framework of the municipal planning sovereignty. Furthermore, building methods that preserve land are needed. For this reason, forecasts on demographic development are already being included in urban land use planning and new development areas restricted to actual necessity.

Nevertheless, municipal needs for strengthening local business, as well as the creation and maintenance of jobs, must be taken into consideration. This, now and then, entails the development of new commercial land. In this as-of-yet unresolved conflict between the desired reduction of land use and sustainable economic growth, it is of special importance to balance the differing interests and to develop viable comprehensive concepts. However, individual and collective prosperity in tandem with sustainable development in the municipalities on a high qualitative level are also possible through solutions that only use limited space.

It will only be possible to deal with land in a sound and low-impact way, however, if the general public can be made receptive to the adoption of this idea. On the municipal level, partners who accept different tasks in society are required. Such partners need to advocate a reduction of land use in the spirit of sustainable development of settlement areas and be committed to the sound and low-impact use of land.

It is also important in this context, to turn the topic of saving land into a regional topic. The goals must be, at both *Land* and sub-regional level, to tackle the instruments of the sustainable development of housing settlements and to demonstrate how the concept of land management can be dealt with 'locally'.

From the point of view of the municipalities, it must also be a goal to receive stronger support from the Federal Government and the *Länder* for the recycling of contaminated land. Another prerequisite for a sustainable development plan for land use is an effective management of brown fields.

IV. Energy saving and energy efficiency: cornerstones of municipal action

For a long time, action based on principles of sustainability has no longer been an end in and of itself for Germany's municipalities; now, it is unavoidable already for economic reasons. If nothing else, the tense budgetary conditions in most of the German municipalities are responsible for this situation. According to a current Bertelsmann study, the public debt in municipalities per capita and inhabitant amounts to 3,286 euros and requires more than 5 billion euros per year in interest alone.

At the same time, the cities and municipalities are affected ever more strongly by the impact of global change in climate. It is chiefly the municipalities that must bear the brunt of the serious consequences from storms, floods, and other environmental disasters. Besides the financial consequences of natural disasters, exploding energy prices are yet another burden for the financial situation of many municipalities. Thus, it is also for economic reasons that climate protection concepts and the associated reduction in energy costs are reasonable.

The energy costs for the maintenance of municipal buildings including street lights amount to 2.5 billion euros per year. This is the third largest block of expenditures in the municipalities, only behind those for social aid and personnel costs. It would already be possible to achieve major savings through organisational measures in this field. Up to 30% of energy costs could be saved through the introduction and/or optimisation of a municipal energy management.

The largest energy savings are possible in buildings: in individual cases, up to 40% of the energy used could be saved. Sustainable action is demonstrated here under three aspects: Energetic redevelopment of buildings, especially of schools and kindergartens, is active climate protection. At the same time, it is also an important investment into education, the topic of the future. Moreover, the local job market is strengthened.

This means that sustainability and cost efficiency do not conflict, but rather may be and must be combined reasonably. The development of jobs in the area of climate protection is further proof of this statement. According

to a survey on the economic effects of the Meseberg package, up to 500,000 new jobs will emerge by 2020 from an ambitious climate protection policy. According to today's forecasts, sales in environmental technologies will exceed those of vehicles construction by 2020 and will continue to increase strongly after that date.

Climate protection and sustainable politics increasingly become factors for choosing a location. Energy-saving development areas, a well-developed and functional system of local public transportation, and active environmental awareness become advantages of location in the competition of municipalities.

V. Support from the Federal Government and the *Länder* required

In view of limited budgets, the cities and municipalities can not by themselves fund the necessary investments for sustainable politics. The need for investments in energetic redevelopment in the area of municipal schools alone is estimated at 5.1 billion euros until 2020. For the municipal administration buildings, additional costs in the amount of 500 million euros are caused. The actual funding for 2008 provided by the investment programme for the energetic renewal of the municipal social infrastructure amounts, however, only to 600 million euros. Of these costs, the Federal Government, the *Länder*, and the municipalities bear 200 million euros each. From the viewpoint of the municipal umbrella organisations, this support alone is insufficient and should be increased further in the next few years as well as be consolidated.

In order to actively shape sustainable politics, additional direct capital grants are necessary, since a large number of municipalities cannot draw on interest-subsidised loans due to their strained budget conditions. In order to prevent sustainable action from being practiced only in financially strong municipalities, flexible solutions that will benefit financially weak municipalities are required. Besides financial help, municipalities are also in need of the necessary planning security for investments, for example, in renewable energies, in order to be able to make an important contribution to climate protection and sustainable development.

Besides these support measures, a stronger linkage of the municipal 'Agenda' processes with the developments at the level of the *Länder* and at the national level is absolutely essential. As the level closest to the citizens, municipalities play a decisive role in mobilising the public and raising public awareness of a sustainable and more environmentally friendly development. A regular exchange of experience among the Federal Governmental, the *Länder*, and the municipal umbrella organisations could improve further the coordination between the various levels with regard to the National Strategy for Sustainable Development.

Due to their strained budgetary and personnel situations, the municipalities believe that supporting future-oriented municipal measures through the Federal Government and the *Länder* is of special importance. In this context, for example, a closer cooperation between the municipal umbrella organisations and the State Secretaries' Committee on Sustainable Development would be desirable. A closer cooperation with the State Secretaries from the various Federal Ministries, as well as from the Federal Foreign Office, could contribute to sharing of local experiences and up-to-date developments directly with the appropriate positions in the ministries. On the other hand, possible problems in the implementation of certain funding schemes could be discussed and resolved, if possible.

VI. Conclusion

The concept of sustainability has steadily developed over the last few years into an important element of municipal politics. Sustainable action is not merely a central concern in the area of ecology, but must also be anchored more and more in economic and social affairs.

Active climate protection, in particular at the municipal level, is an essential element of a sustainable municipal policy. Because of their key position, the municipalities play a special role in reaching the Federal Government's goal to cut back gas emissions by 40% by 2020, as compared to 1990. Faithful to the motto 'Think global, act local', climate protection goals can only be achieved through an active participation and support of the municipalities. Besides climate protection, spatial planning and the reduction of land use represent important elements of sustainable development in the municipalities.

It must be the goal to further reduce land use for settlements and transport areas. It will be decisive for this success to balance the reduction of land use with of local business promotion, which sometimes goes hand-in-hand with further development of commercial areas for the creation and maintenance of jobs. The local and regional levels need to develop coherent master plans in this field.

Action based on principles of sustainability has no longer been an end in and of itself for Germany's municipalities for a long time now. Now, it is unavoidable not only for ecologic, but also for economic reasons. The high debts of the municipalities require 5 billion euros in interest payments alone every year. At the same time, it is the cities and municipalities that are affected ever more strongly by the impacts of global climate change. It is chiefly in the municipalities that the consequences of increasingly frequent natural disasters are felt. Furthermore, the municipalities to a significant degree are affected by the exploding energy costs. The largest energy saving in the amount of 40% is possible through energetic redevelopment of municipal buildings, and especially of the more than 40,000 schools and 50,000 kindergartens. This means that sustainability and saving costs do not conflict, but rather may be and must be combined reasonably.

In view of limited municipal budgets, necessary investments for sustainable politics cannot be made without the targeted support of the Federal Government and the *Länder*. The need for investments in energetic redevelopment in the area of municipal schools alone is estimated at 5.1 billion euros before 2020. The 600 million euros in funding during 2008 promised by the investment programme for the energetic renewal, however, are not sufficient. Support must, for this reason, be continued on a higher level in the coming years and developed further. Since interest-subsidised loans cannot be utilised by many municipalities due to their already-strained financial situations, direct financial grants are necessary for the support of sustainable policies. In view of the in part greatly differing framework conditions (decreasing versus growing population, etc.) in the cities and municipalities of Germany, more flexible funding opportunities are required. In order to ease municipal investments, across-the-board support should be provided. The municipalities themselves should be able to determine the main purpose for this support on the basis of the integrated and coordinated investment and development concepts that reflect the specific local situations.

Besides the development of support measures, an intensification of information exchange among the Federal Government, the *Länder*, and the municipalities is desirable. As the political and administrative level closest to the citizens, municipalities play a decisive role in mobilising the public and raising its awareness of a sustainable and more environmentally friendly development. A regular exchange of experience between the national level, the *Länder*, and the municipalities, e.g. with the State Secretaries' Committee on Sustainable Development, sets the stage for staying informed as to current developments and speeding up the implementation of the municipal 'Agenda-' and sustainability processes.

Sustainability in Europe

The shaping of a sustainable future is an international challenge that no country can meet on its own. The European Union counts sustainability as one of its most important political priorities. The 'Renewed EU Sustainable Development Strategy' that the European Council adopted in June 2006 is an expression of this prioritisation. With it, the European Union has further developed the process that began in Gothenburg in 2001 and adapted it to current challenges.

European Union Sustainable Development Strategy 2006

The EU Sustainable Development Strategy names four key objectives for a sustainable future: environmental protection, social equity and cohesion, economic prosperity and meeting the EU's international responsibilities.
In order to achieve these goals, seven key challenges were identified: climate change and clean energy; sustainable transport; sustainable consumption and production; conservation and management of natural resources; public health; social inclusion; demography and migration, and global poverty and sustainable development challenges.
At the same time sustainability is secured firmly as a cross-sectional goal of European policy. Synergies between the Sustainable Development Strategy and the Lisbon Strategy for Growth and Jobs, the integration of sustainability in legislation impact assessment and better law-making are to contribute to the goals of the strategy.
The strategy emphasises the linking of European and national sustainability policies and the responsibility of all those involved—in politics, business and civil society—for sustainable development.

The EU Strategy, with its chief concepts and cross-sectional goals, set out a framework on which the Germany Strategy for Sustainable Development is also based. Many regulations and measures described in the present Progress Report have their counterparts in the European Sustainable Development Strategy.

Progress in the implementation and the general orientation of the European Sustainable Development Strategy are examined every two years by European Heads of State and Government on the basis of a progress report prepared by the EU Commission. The first report was presented in September 2007. It was based chiefly on national progress reports of EU member states (see the German report of 18th June 2007 at *www.auswaertiges-amt.de*) and statistical evaluations by EUROSTAT. The results presented in the report are rather limited. In comparison to the basis year 2000 the EU Commission sees little concrete progress at European level; the political plans for the future were, however, rated positively. This applies chiefly to the central challenge of climate change that is top of the agenda at European as well as national level. The report recommends that the European Council pushes ahead with implementation of the Sustainable Development Strategy.

The European Council has accepted this task. In December 2007 the Heads of State and Government examined progress made in the European sustainable development policy for the first time.

'Sustainable development is a fundamental objective of the European Union. The European Council welcomes the Commission's first progress report on the renewed EU Sustainable Development Strategy (SDS). It agrees that ... the main focus should ... be on effective implementation at all levels. The renewed EU Strategy and national strategies for sustainable development also need to be linked up more closely ... The EU's integrated climate and energy policy and an integrated approach to the sustainable management of natural resources, the protection of biodiversity and ecosystem services and sustainable production and consumption are among the drivers for achieving objectives under both the SDS and the Lisbon Strategy. The EU must continue to work to move towards more sustainable transport and environmentally-friendly transport modes. The Commission is invited to present a roadmap together with its next progress report in June 2009 on the SDS setting out the remaining actions to be implemented with highest priority.'

Presidency conclusions of the European Council, 14th December 2007

The European Commission has followed the recommendations of the European Council and in 2008 presented several extensive proposals for sustainable development in Europe. The first was the so-called 'Climate action and renewable energy package' of January 2008 that is designed to promote the reduction of CO_2 emissions and the increase in the use of renewable energies. These proposals are based upon the resolutions for a climate-friendly European energy policy that were drawn up in March 2007 under the German EU Presidency.

In May 2007 the European Commission presented several proposals on sustainable production and consumption. The main focus here was the consideration of sustainability criteria in public procurement and in energy-efficient design of equipment and procedures. These were followed in June 2007 by a bundle of proposals for sustainable transport with the objective of internalising external costs, promoting intelligent traffic management systems and environmentally- and consumer-friendly transport. Further initiatives implementing the European Sustainable Development Strategy are to follow.

Sustainability within the Framework of the United Nations

The goals of sustainability cannot be achieved through national efforts alone—global cooperation is essential. The United Nations (UN) are the crucial political platform for this. Germany is very much committed to supporting and strengthening UN mechanisms to achieve substantial improvements for a coherent and innovative global environmental and development policy. For this reason, the Federal Government regards its commitment to the UN as an important part of a globally oriented National Strategy for Sustainable Development, too.

Concrete building blocks were laid at the Earth Summit in Rio de Janeiro in 1992 and the World Summit on Sustainable Development in Johannesburg in 2002 in the form of Agenda 21 and the Johannesburg Plan of Implementation. The international community of states has undertaken to implement the objectives of sustainable development.

Agenda 21 and the Johannesburg Plan of Implementation are also the basis for the drafting and further developing of the National Strategy for Sustainable Development. Germany is committed both bilaterally and multilaterally to the implementation of these goals. This applies chiefly to the areas of access to clean drinking water, basic sanitation, sustainable energy policy, chemical security, as well as sustainable consumption and production and the fight against poverty. With the plans set out at the conference 'renewables 2004' and holding of the ninth Conference of the Parties to the Convention on Biological Diversity (CBD) 2008, Germany's commitment to implementing sustainable development within the framework of the United Nations became clear to the public, too. For more information on the concrete areas of action of the Federal Government's globally oriented sustainability policy, see Chapter D.VI.; remarks on the UN Decade 'Education for Sustainable Development' can be found in Chapter A.II.3.

UN Commission on Sustainable Development

The UN Commission on Sustainable Development is a central international committee to support the implementation of Agenda 21, the Johannesburg Plan of Implementation and the Millennium Development Goals. Following the World Summit on Sustainable Development (WSSD), it adopted a comprehensive work programme for the period 2004 to 2017 to review summit results, focussing on central themes of environment and development in two-year cycles. The results of the first working cycle 2004/2005 on the subjects of water, basic sanitation and sustainable settlements, which contain concrete objectives and action priorities, were supported by Germany. The Federal Government actively participates bilaterally and multilaterally in the implementation of these goals.

The second two-year cycle of the work programme 2006/2007 focussed on energy, sustainable industrial development, climate change and air pollution/atmosphere. Here, Germany and its partners in the EU committed themselves to concrete deadlines for developing renewable energies, incorporating energy policy into national planning from 2010, a mechanism for reviewing energy questions within the framework of CSD and an international agreement on energy efficiency—from the viewpoint of the EU, these are important elements on the road to achieving the Millennium Development Goals.

This two-year cycle ended in May 2007 without achieving any results, as the draft resolution last presented by the CSD chairperson was disappointing

and therefore rejected by the EU and Switzerland. Despite the failure of the negotiations in 2007, Germany continues to support the CSD as an essential committee within the framework of the United Nations for the implementation of sustainable development.

In the two-year cycle 2008/2009 the CSD is dealing with the concepts of agriculture and rural development, land, drought and desertification and Africa. With respect to agriculture, Germany is especially committed to the development of internationally harmonised environmental and social standards for sustainable agricultural production. The EU has since defined this matter as one of its priorities for the CSD's current two-year cycle.

At the UN World Summit in 2005 on the first five-year review of the Millennium Declaration, the international community of states reaffirmed the declaration and called for a reform of UN structures in the areas of development, humanitarian aid and conservation.

UN Environmental Reform

A comprehensive options paper was presented in June of 2008 within the framework of informal consultations conducted by the UN General Assembly on the strengthening of multilateral institutional structures of the United Nations in environmental areas. This paper cited detailed reform proposals that are currently being discussed by the international community of states. Germany supports these proposals.

Germany's efforts are focussed especially on strengthening and improving upon the United Nations Environment Programme (UNEP). The responsibilities of UNEP have steadily grown in the past—but not the status, the mandate and the provisions of the organisation. The EU as well as, among others, Algeria, Ghana, Morocco, Mexico, Norway and Switzerland, demand a strong UN environment organisation that can effectively support the balance between economic globalisation and the demands of a global environmental policy in the sense of sustainable development. Brazil demanded the creation of an umbrella organisation that will encompass UNEP, the Global Environment Facility (GEF) and the secretariats of the multilateral environment agreements and at the same time provide stimulus for the area of sustainable development. Discussions at the UNEP Global Ministerial Environment Forum in February 2008 in Monaco showed that there is broad agreement that UNEP in its current structure as a UN programme cannot do justice to its tasks as a central global environmental institution and, therefore, fundamental reform is necessary.

UN Forum on Forests (UNFF)

With the significant support of the German EU Council Presidency, the UN Forum on Forests reached an agreement on an international instrument for sustainable forest management in April 2007 for the first time since the Rio conference in 1992. This was adopted by the UN General Assembly on 17th December 2007. Despite its legally non-binding character, the UNFF forestry agreement, especially in the context of other global environmental processes, opens up improved possibilities to promote sustainable forest management worldwide and thus counter increasing deforestation. Proposals for a corresponding strengthening of the UNFF Secretariat were included in the structural reform proposals of 2008.

UN Convention to Combat Desertification (UNCCD)

The UNCCD obliges its 193 contracting states to support sustainable land management. This is a significant contribution to the sustainable development of dry areas that are especially affected by climate change. Germany supports the UNCCD and the ten-year strategy that was adopted in 2007 for the implementation of the Convention.

K Outlook

In 2010 the Federal Statistical Office will once more be reporting on the performance of the sustainability indicators. The next Progress Report is scheduled for 2012. This time will used by the Federal Government to focus on the implementation and further development of its Strategy.

What is required is for sustainability to be regarded in a comprehensive and consistent manner as a leading principle of German politics. Sustainability shapes all political fields. Technological, economic and social progress must be measured according to the principle of sustainability. If sustainability is regarded as a challenge, it can become a driving force for innovation. In this sense, the Strategy for Sustainable Development is a future strategy for the 21st century.

Sustainability Management

—Summary of existing elements of control and processes of the National Strategy for Sustainable Development—

I. Significance, basis and scope of sustainability as an instrument of control

1. Sustainable development (sustainability) is a **guiding principle** of the politics of the Federal Government. As a goal and yardstick of government action at national, European, and international levels, it must be observed in all measures and all policy fields.

2. **Sustainability** aims at the achievement of intergenerational equity, social cohesion, quality of life, and the acceptance of international responsibility. In this spirit, economic performance, the protection of natural resources, and social responsibility are to be united so that developments will be permanently sustainable.

3. **The National Strategy for Sustainable Development** is the 2002 Strategy as further developed in the reports that followed it, particularly the Progress Report 2008. The Strategy describes a process of policy development for the longer term and offers guidance with regard to this process.

4. The **main responsibility** for sustainable development at the national level rests with the Federal Chancellery in order to emphasise the significance for all policy areas and assure cross-departmental monitoring and control.

5. To make sustainability a reality depends strongly upon the **interplay of all relevant stakeholders**. Additional stakeholders in the field of sustainability are:

a) **International level**

Germany is committed, both within the framework of the United Nations (especially within the framework of the UN Commission on Sustainable Development—CSD) and bilaterally, to progress in sustainability.

b) **European level**

Germany:
—is committed to strengthening sustainability at the European level, especially of the EU Sustainable Development Strategy as well as the links between the EU Strategy and the national strategies; and,
—cooperates closely with other European countries on sustainable development issues.

c) ***Länder* and municipalities**

Between the Federal Government and the *Länder*, there is a regular exchange regarding sustainability within the framework of the appropriate committees towards integrating activities and goals better. The municipal umbrella organisations are also included in these discussions.

d) **Civil society** (citizens, businesses and labour unions, science, churches, and associations)
There are various demands placed upon stakeholders in civil society in order to achieve sustainability. Thus, businesses, for example, carry the responsibility for their production and products. The information provided to consumers as to health- and environmentally-relevant characteristics of products as well as about sustainable production methods is also a part of this responsibility. Consumers make individual contributions through their product choices and the socially and ecologically sustainable and economically sensible use of these products.

II. Sustainability management

1. In the assessment and development of measures in their areas of responsibility, the ministries employ the **management concept** of sustainability. This concept contains the following three elements:
—Management rules for sustainability (2.)
—Indicators and goals (3.)
—Monitoring (4.)

2. Management rules for sustainability

Basic Rule

(1) Each generation must solve its own problems and not burden the next generations with them. It must also make provisions for foreseeable future problems.

Rules of sustainability for individual areas of action

(2) Renewable natural goods (e.g. wood or fish populations) should only be used in long term within the bounds of their ability to regenerate. Non-renewable natural goods (e.g. minerals or fossil energy sources) should only be used in the long term within the context of how their functions can be replaced by other materials or energy sources.

(3) The release of materials or energy should not exceed in the long term the adaptability of the eco-system—e.g. the climate, forests and oceans.

(4) Dangers and unjustifiable risks to human health should be avoided.

(5) Structural change triggered by technical developments and international competition should be shaped in a way that is economically successful as well as ecologically and socially sustainable. For this purpose, political fields should be integrated so that economic growth, high employment, social cohesion and environmental protection go hand in hand.

(6) The association of consumption of energy and resources and transport services with economic growth needs to be broken. At the same time, we should aim for growth-related increases in demand for energy, resources and transport to be more than offset by efficiency gains. In this context the creation of knowledge through research and development as well as the dissemination of the knowledge through specific educational measures play a decisive role.

(7) Public authorities are also obliged to take into account intergenerational equity. Federal Government, *Länder* and municipalities should present balanced budgets and then take the further step of continually reducing their debt position.

(8) Sustainable agriculture needs to be compatible with nature and environment and take into account the demands of keeping animals in a way that is fair to the animals and providing consumer protection, particularly concerning health matters.

(9) In order to strengthen social cohesion
—poverty and social exclusion should be prevented as far as possible,
—opportunities for participating in economic development should be open to all sections of society,
—necessary adaptations to demographic change should take place at an early stage in politics, economy and society,
—everybody should take part in social and political life.

(10) General international conditions should be shaped jointly in a manner, which ensures that people in all countries can lead a life worthy of a human being and according to their ideas and in unison with their regional environment while at the same time take part in economic developments. Environment and development form a unit. Sustainable global action is based on the Millennium Development Goals of the United Nations. An integrated approach should link the fight against poverty and hunger with
—regard for human rights,
—economic development,
—environmental protection, and
—responsible action by governments (good governance).

3. Sustainable development will be measured in **21 areas** by means of the following **key indicators**:

No.	**Indicator areas** Sustainability axiom	**Indicators**	**Goals**
		I. Intergeneration equity	
1a	**Resource protection** Using resources economically and efficiently	**Energy productivity**	Doubling between 1990 and 2020
1b		**Raw material productivity**	Doubling between 1994 and 2020
2	**Climate protection** Reducing greenhouse gases	**Greenhouse gas emissions**	Reduction of 21% compared to 1990 until 2008/2012
3a	**Renewable energies** Strengthening a sustainable energy supply	**Share of renewable energy sources in total primary energy consumption**	Increase to 4.2% by 2010 and to 10% by 2020
3b		**Share of renewable energy sources in electricity consumption**	Increase to 12.5% by 2010 and to at least 30% by 2020
4	**Land use** Sustainable land use	**Increase in land use for housing and transport**	Reduction in daily increase to 30 hectares by 2020
5	**Species diversity** Conserving species—protecting habitats	**Species diversity and landscape quality**	Increase to the index value 100 by 2015
6	**National debt** Consolidating the budget—creating intergeneration equity	**National deficit**	Structurally balanced public spending; federal budget without net borrowing from 2011 at latest
7	**Provision for future economic stability** Creating favourable investment conditions—securing long-term prosperity	**Gross fixed capital formation in relation to gross domestic product (GDP)**	Increase in the share
8	**Innovation** Shaping the future with new solutions	**Private and public spending on research and development**	Increase to 3% of GDP by 2010

No.	Indicator areas Sustainability axiom	Indicators	Goals
9a	**Education and training** Continuously improving education and vocational training	**18- to 24-year-olds without a school leaving certificate**	Reduction in proportion to 9% by 2010 and 4.5% by 2020
9b		**25-year-old university graduates**	Increase in proportion to 10% by 2010 and 20% by 2020
9c		**Share of students starting a degree course**	Increase to 40% by 2010, followed by further increase and stabilisation at a high level
		II. Quality of life	
10	**Economic prosperity** Raising economic output by environmentally and socially compatible means	**Gross domestic product per capita**	Economic growth
11a	**Mobility** Guaranteeing mobility—protecting the environment	**Intensity of goods transport**	Reduction to 98% in comparison to 1999 by 2010 and to 95% by 2020
11b		**Intensity of passenger transport**	Reduction to 90% in comparison to 1999 by 2010 and to 80% by 2020
11c		**Share of rail transport in goods transport performance**	Increase to 25% by 2015
11d		**Share of inland water transport in goods transport performance**	Increase to 14% by 2015
12a	**Farming** Environmentally sound production in our cultivated landscape	**Nitrogen surplus**	Reduction to 80kg/hectare on land used for agriculture by 2010, further reduction by 2020
12b		**Organic farming**	Increase of the share of organic farming on land used for agriculture to 20% in coming years
13	**Air quality** Keeping the environment healthy	**Air pollution**	Reduce to 30% compared to 1990 by 2010
14a	**Health and nutrition** Living more healthily for longer	**Premature mortality** (cases of death per 100,000 residents under 65) **men**	Reduction to 190 cases per 100,000 by 2015
14b		**Premature mortality** (cases of death per 100,000 residents under 65) **women**	Reduction to 115 cases per 100,000 by 2015
14c		**Proportion of adolescents who smoke** (12- to 17-year-olds)	Decrease to under 12% by 2015
14d		**Proportion of adults who smoke** (15 years and older)	Decrease to under 22% by 2015
14e		**Proportion of obese people** (adults, 18 and older)	Reduction by 2020
15	**Crime** Further increasing personal security	**Burglaries in homes**	Reduction in cases to under 100,000/year by 2015
		III. Social cohesion	
16a	**Employment** Boosting employment levels	**Employment rate (total)** (15- to 64-year-olds)	Increase to 73% by 2010 and 75% by 2020
16b		**Employment rate (older people)** (55- to 64-year-olds)	Increase to 55% by 2010 and 57% by 2020
17a	**Perspectives for families** Improving the compatibility of work and family life	**All-day care provision for children** (0- to 2-year-olds)	Increase to 30% by 2010 and 35% by 2020
17b		**All-day care provision for children** (3- to 5-year-olds)	Increase to 30% by 2010 and 60% by 2020

No.	Indicator areas Sustainability axiom	Indicators	Goals
18	**Equal opportunities** Promoting equal opportunities in society	**Wage difference between women and men**	Reduce the difference to 15% by 2010 and to 10% by 2020
19	**Integration** Integration instead of exclusion	**Foreign school leavers with a school leaving certificate**	Increase in the proportion of foreign school leavers with at least *Hauptschule* certificate and alignment with quota for German school leavers by 2020
IV. International responsibility			
20	**Development cooperation** Supporting sustainable development	**Share of expenditures for official development assistance in gross national income**	Increase to 0.51% by 2010 and 0.7% by 2015
21	**Opening markets** Improving trade opportunities for developing countries	**German imports from developing countries**	Further increase

4. **Monitoring**

a) Progress is reported on a regular basis, including goals not yet achieved.

Every two years, the Federal Statistical Office publishes an **Indicator Report**. The Federal Statistical Office is responsible for the technical analysis of the indicators and their development.

The reporting on the Strategy itself (**Progress Report**) is carried out once every legislative period. The Progress Reports evaluate the state of the implementation of the Strategy, contain concrete measures for the achievement of the stated goals, and further develop the Strategy in selected focal areas.

The reports are made available to the German Bundestag for information purposes.

b) The **public** is comprehensively involved in the preparation of Progress Reports at an early stage.
c) In addition, the various ministries represented in the State Secretaries' Committee on Sustainable Development regularly **report** on current sustainability issues in their own fields of business and activity.

III. Institutions

1. The **Federal Cabinet** adopts changes in and further developments of the Strategy for Sustainable Development.

2. The **State Secretaries' Committee on Sustainable Development:**

a) develops further the contents of the National Strategy for Sustainable Development;
b) regularly monitors the development of the indicators of sustainability;
c) is the contact for the Parliamentary Advisory Council on Sustainable Development, for the *Länder*, and for municipal umbrella organisations; and
d) acts as an advisor on current topics of Federal Government work related to sustainability.

All ministries are represented in this Committee. The State Secretaries' Committee on Sustainable Development is chaired by the Head of the Federal Chancellery.

3. The meetings of the State Secretaries' Committee on Sustainable Development are prepared by a **working group** under the direction of the Federal Chancellery in which all of the ministries are represented by the directors responsible for the respective subject.

4. The **Interdepartmental Working Group on Sustainability Indicators,** under the lead of the Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety and with the participation of the Federal Statistical Office, performs preparatory work with regard to technical monitoring and further development of sustainability indicators.

5. The **German Council for Sustainable Development** (resolution of the Federal Cabinet on 26th July 2000, as amended on 4th April 2007):

   a) advises the Federal Government with regard to questions of sustainable development;
   b) develops contributions to the further development of the Strategy for Sustainable Development;
   c) publishes statements on individual relevant topics; and,
   d) contributes chiefly to raising public awareness as well as to the dialogue on sustainability in society.

   The members of the Council are appointed by the Federal Chancellor.

IV. Procedures within the Federal Government for the implementation of the Strategy

1. On the basis of the Strategy for Sustainable Development, the **ministries** organise their activities, including their administrative practices, based upon the necessity of sustainable development. In legislation, the impacts of the act or decree to be passed on sustainable development are examined and the results presented. The assessment is performed within the framework of **legislation impact assessment** by the ministry mainly responsible for the legislative project.

2. The ministries permanently **monitor** the **implementation** of measures within the framework of the Strategy for Sustainable Development and, when needed, inform the State Secretaries' Committee on Sustainable Development about problems that arise.

3. In the framework of their own **communication**, the ministries take care to highlight references to the Strategy for Sustainable Development.

4. The Federal Government makes clear through appropriate **cross-departmental projects** that it practices sustainability. The State Secretaries' Committee on Sustainable Development is responsible for the approval of projects.

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Imprint

Published by
Press and Information Office of the Federal Government
11044 Berlin

Report date
July 2008 (indicators: August 2008)

Design
Otterbach Medien KG GmbH & Co.
76437 Rastatt

Printed by
Silber Druck oHG
34266 Niestetal

Translation
Dr. Fredrik J. Heinemann, 95497 Goldkronach
HK-Übersetzungen GmbH i.Gr., Heike Demme, 24118 Kiel

The publication can be ordered from
Postal adress
Publikationsversand der Bundesregierung
Postfach 48 10 09
18132 Rostock
Service hotline: +49 (0) 18 05/77 80-90
Servicefax: +49 (0) 18 05/77 80-94
E-Mail: publikationen@bundesregierung.de